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WHAT IS A TRUE ARCHITECT?



THE question—What is meant by “an architect,” has been recently asked by a man of some influence and some position at a meeting of an influential society, the inquirer adding that he himself had been unable to arrive at the meaning of the term, though he had taken some trouble to try to do so. We refer, of course, to observations which fell from Mr. Cole at a recent meeting of the Society of Arts, and which were reported in a condensed form in our impression for December 20th, 1860. We conceive that, inasmuch as the chairman of that meeting declined to permit any reply to be made

to these observations, although he failed to prevent them as he ought to have done had the subject been out of place, it is right to publish here something of what might have been said in reply to Mr. Cole's speech had leave been granted.

We shall merely, however, take the discussion at the Society of Art's rooms as a starting-point. We have already pointed out the want of candour and want of logic in Mr. Cole's speech, and are not going to dignify it by imputing to it a character of real inquiry after truth, to which it has no claim.

Although we are sure that Mr. Cole, judging only from the contents of his speech, knows enough about common things to be very well aware what an architect really is, had it suited his purpose to say so, his profession of ignorance is none the less remarkable.

Here is a great and influential body of men practising a distinguished and ancient art, and yet an Englishman, not without education and attainments, and claiming to be considered a leading man, can stand up amidst an attentive audience and venture to say that he cannot understand to whom to apply the name distinctive of this body, without a fear that his reputation should suffer thereby! Such an event makes it our duty to try to understand what a true architect is, and whether there is any real ground for mistake as to the term.

Architect is a word in use in nearly if not all European tongues, and is derived by them from the Greek, through the Latin. It and the related word architecture mean, the one highest, best, or chief builder, and the other highest, best, or chief building; an architect or *arch*-builder being a first or chief builder in relation to other builders, just as an archbishop is a chief or first bishop, or an archangel a chief angel.

If then an architect is a chief builder, some will suppose the meaning of the word to be little, if anything, more than a master builder. Important words in the English language are, however, usually far more truly significant than this explanation would make the word architect to be; and if the reader will take the trouble to find out the few words we have in the language compounded with *arch*, he will find that in all of them a person or an office is designated, about which a double meaning is conveyed, it being hard to say which idea is most prominent, that of being chief in the sense of being ruler, or that of being chief in the sense of being personally highest, foremost, and best.

This combined sense pervades the word now under consideration, an architect is a chief builder, because he builds in the highest and best way, and his art is architecture or chief building, as being the noblest manner of building. He is also a chief builder as being director of others, but that this is the secondary sense of the word, the first named being the primary meaning, is significantly shown by the fact that no analogous secondary sense attaches to the cognate term architecture.

When we look at an architect in the first of these two aspects, that of a *best builder* we understand at once what is not always clear to some, namely, the combination of art and fine art, which he needs to possess. A building to be done in the best possible way must be arranged for the most convenient discharge of its functions, whatever they are. It must rest with perfect security on its foundations, must be constructed perfectly well, and in every part must show that the very best thing possible for that part was known to the master builder, and was done by him. And, above all this, the building must be, in its design and in its workmanship, a work of beauty, feeling, art. There must be as much appropriateness of expression in it, and as much beauty in it as the circumstances will admit, and it is only when a building reaches all these requirements that it is a perfect building, and that its manner is the very highest building or perfect architecture; and it is only when its builder has attained this end that he is a perfect architect.

No human work is absolutely perfect, and there are few works of

art in which even ordinary spectators cannot see imperfections. Architecture, then, must embrace, and, in fact, must consist of, many manners of building short of perfection. Architects must be tolerated who fall below the ideal standard. What, then, if imperfections are to be tolerated, is the side where deficiency does the least harm? What, again, is the noblest of the qualities of a builder?—the presence of which ought most to entitle him to rank as an architect, even if weighed against defects in other qualities.

We are far, very far from being tolerant of defective construction, or faulty arrangement, and we never can withhold altogether our approval from buildings which display these two excellences, even if higher ones are strikingly absent; it is, however, hardly necessary to pause for a moment before deciding that it is not these, but the beauty and the expression of the building which are the highest and noblest of its characteristics, and that it is as a work of art, and not as a specimen of construction, that it will have its strongest hold upon human affection, and its highest claim to human regard.

Where a building reaches the highest possible pitch of artistic excellence its defects or excellencies, in a constructive point of view, are, for the most part, almost overlooked, and its arrangements are scrutinised with a comparatively careless eye.

Many an observer, nay, a worshipper, of the beauty of the finest remains of Medieval art would be quite unable to tell whether individual specimens had been well or badly built—nay, would be tenfold more delighted by some rudely constructed, clumsy piece of early work than by the most perfectly constructed fan groining or Perpendicular tracery of a late date. No one calls modern London houses works of architecture, and yet they cannot be exceeded as specimens of arrangement and adaptation. No one much loves many of our railway stations, where the best of materials and workmanship are displayed; and yet they are specimens of first-class structural skill, but with bad arrangement and no design. That Chichester steeple was so badly constructed that its own weight crushed it, has never been held to remove it from the position of a work of architecture of the highest order; and it is to the art, rather than the skill, of the architects of all ages that we turn with gratitude and reverence when we think over the great works of architecture with which the world is enriched.

We hold him, then, to be an architect who has shown himself able to build in the best manner, and we maintain that, while the qualities of the artist and the workman ought to meet in him, it is the former, and not the latter, which make him a real architect. No mere constructor and arranger can be called an architect, if, while engaged on structures that might be made works of art, he infuses no art into his work. A mere artist might be an architect, were he able, in spite of errors in arrangement and defects in construction, to infuse a true spirit of art into his buildings; though, in fact, such examples are comparatively rare. Instances of the presence of a high constructive genius, with no high art, are, however, frequent, especially at the present day.

Never has there been a period, since the time of the Roman Empire, when so much merely utilitarian building has been done in one country, as has been performed in Great Britain, within the last half-century; and it is to this fact that we attribute the state of public ignorance or indifference, which alone could make it safe for an educated man to stand up among some hundreds of other educated men, and say, “I don't know what an architect is.” The last century was not a building age, but, as England recovered strength after the great wars of Napoleon the First, she began a mighty course of building for purely utilitarian and commercial purposes. The cotton mills of Lancashire, the bonded warehouses of Liverpool, the docks of London, the factories of Birmingham and of Sheffield, the union workhouses, the prisons, the lunatic asylums, and the great network of canals, and the still greater network of railways, have all been vast works from which every consideration except that of use, construction, and arrangement, has been, in nine cases out of ten, rigorously excluded.

When architects in the true sense of the word have been entrusted with these works, they have ordinarily been forced to content themselves with attention to the first two parts of good building, omitting altogether the highest, and by degrees a profession has sprung up—that of civil engineers, consisting of men who only profess to study construction and arrangement, and to whose care works of most prodigious extent and importance have been entrusted.

There is no profession the members of which are less jealous and exclusive than the architects of England at the present day. The names of the great Renaissance architects whom Mr. Cole named in his speech are received among them, and honored without an inquiry as to whether the men had been “regularly articulated,” or where or how they had learned their calling.

The works of men who prove that they can build at once like good constructors and true artists are the only evidence necessary—nay, the only evidence *possible*—of their being architects.

No man can learn the fine art of architecture any more than he can learn the constructive art of engineering, without prolonged and earnest

study directed to that particular branch of skill, and without natural ability; and architects are perfectly ready, as ready as the public, to recognise ability and genius when it is shown, without inquiry as to what school it has come from, well aware that it has not been attained without labor, study, and genius.

There is, however, a natural tendency to distrust those who have not been known to devote themselves to the regular study of architecture, and for the very good reason that that study is so important and formidable that few persons can possibly master it without great, long continued, and almost exclusive application to it. The great men named by Mr. Cole did not arrive at their skill in the art without labor and pains, and if they acquired it in a way different from that often followed, and had the advantage of adding to it knowledge of other arts and sciences, it is none the less certain that they *did* acquire it; and the ease with which some of them added it to other great attainments is no proof of the smallness of the labor, but only goes to show the magnitude of the powers of mind possessed by a favored few, and that these men were exceptional instances is clear when we consider that they include the names of three out of the four greatest artists whom Italy produced—Giotto, Michel Angelo, and Leonardo—men who have been justly deemed giants, while, of the others named, nearly the whole devoted, after early youth, their *exclusive* attention to architecture, thus showing that if they were great enough to educate themselves to architecture they found it a study and an art filling up their whole time.

Now, it is not to be supposed that a military Engineer officer can have devoted any large amount of his time to the laborious study of the principles of beauty in building, and of the means which are under the architect's control for producing it. He has had other things to learn which are, like architecture, a life-study for a mind of ordinary capacity.

Accordingly, from the first moment when it was announced that the building was in the hands of an engineer, able as that engineer unquestionably is, every one expected what has come to pass—namely, that the structure would be a creditable piece of planning and construction, but that it would not be a work of architecture; that is to say, that it would not rise to the height of the noblest manner of building, and that it would not exhibit the chief quality for which it gave scope; in short, that there would be much skill but little art, or in other words, that it would be good engineering but *not architecture*.

Thus much for the particular instance which has provoked this discussion. Turning from it once more to the general subject, we repeat, that an architect is an artist who builds, and whose buildings are as well arranged and as well constructed, and, above all, as noble works of art as the occasion and the circumstances of them allow.

It is only recently that any large amount of consideration has, within the present century, been paid to beauty in building, and consequently the public, long used to regard structural excellence as the very highest excellence in building; in fact, as architecture, have not thoroughly learned to appreciate the value of that art which makes the monuments of past ages a perfect fountain of delight to us their successors, and which will secure for some, and only some, of the many costly piles which the present generation has reared, a lasting place in the affections of our descendants.

Accustomed to works of domestic engineering we had, as a nation, become indifferent to anything higher, and it is only by degrees that we can expect the country at large to be intelligently acquainted with what true architecture is, and consequently able to answer the question "What is a true architect?"

BATH ASSOCIATION OF BUILDERS.

WE have been asked to publish the following:—

"A short time since at the opening of the Liverpool Architectural Society, the President, Jas. M. Hay, Esq., in his address commented on strikes, and said, 'No permanent association exists among the masters, but in its place a mushroom combination, speedily got up to suit the emergency, which as speedily dies away the moment the contest is over.'

"It is the need of this permanent association to which we would direct the attention of your readers, and urge upon them to adopt means for procuring the support of builders in their respective localities, to back a request to the London Association, asking them to take steps in the formation of a general and permanent Builders' Association.

"Such a course becomes imperatively forced upon us, if we would still retain a proper directive authority over our own affairs, and be in a position to protect well-intentioned and sensible men from the baneful influence of the Trade Unions so severely felt by many thousands of workmen, who are utterly unable to help themselves by breaking off connexion with it, for to escape from its odious tyranny would be to forfeit their contributions to its benefit funds, thus sacrificing the savings of years, and incurring additional expense in joining others, and to which an insurmountable obstacle is in many cases offered by extreme age.

"Signed by the Secretary on behalf of the Bath Association of Master Builders.

A NEW WATERPROOF CLOTH.—It is stated that Mr. Szcerelemy has discovered the means of rendering a woven fabric completely impervious to wet or damp, and which will not crack or shrink, permits the perspiration to pass off, is exceedingly soft to the foot, and will fit it as a glove fits the hand. The product is called Panonia.

METROPOLITAN MARKETS.

IF it were required to adduce an instance of blundering legislation, or how over-careful provisions may end in a dead lock, no better case could be brought forward, perhaps, than that of the Cattle Market. Between the Corporation and Parliament a system of mutual checks has been instituted, for when, after a great deal of sparring, and much threatening of corporation reform, the civic authorities are forced to agree to execute improvements, Parliament or the Executive interferes, and insist on some other work being previously completed which the City is incapable or unwilling to undertake. It is about thirteen years since the meat-market question was brought forward in an official and tangible form. It had been agitated before by Mr. C. Pearson, in connexion with the construction of metropolitan railways; but it is not necessary to proceed further back than 1849, which may be taken as the starting-point. Then the desirability of abolishing Newgate-market was admitted as an established fact, and vested interests had to give in. Two years later came the Metropolitan Cattle Market Act, which led to a committee of civic authorities being appointed to decide upon a site to which Newgate-market could be advantageously removed, to negotiate with Government to obtain a part of Smithfield for this site, and to enter into arrangements with the Metropolitan Railway Company for the establishment of railway communication between the proposed new dead-meat market and the slaughter-houses to be established in connexion with the cattle market at Islington.

Somewhere about 1857—it having taken six years to get so far—Mr. Bunning, the city architect, prepared plans and designs for the construction of the market to the north of Long-lane. Indeed, he prepared three plans, each affording apparently ample provision. There was to be a market area of 150,000 square feet, with a sufficient number of approaches, each 60 feet wide. The cost of site and of constructing the approaches was estimated at £235,000; the expense of building the market was set down at £210,000, making the total outlay £445,000. A second scheme was subsequently proposed by the same gentleman, similar to the first, with the exception of an addition of an excavated basement, to serve as a railway goods station. The cost of site and approaches would be the same, but it would be divided into two sums, one of which, £188,000, would be charged to the markets, and the other, £47,000, to the account of the railway. The addition of the railway station would increase the cost of constructing the markets by £70,000 to £280,000, which it was also proposed to separate into two sums that were to be charged, one, £188,000, to the market, and the other, £92,000, to the railway. The total cost would thus be raised to £515,000, of which, £376,000 would be on account of the market, and £139,000 on account of the railway. A third scheme was prepared by Mr. Bunning which provided warehouses in addition to the arrangements indicated in the second plan, which would swell the total to £647,000, namely, £235,000 for site and approaches, and £402,000 for constructions. The cost of site was to be apportioned, £136,100 to markets, £47,000 to railways, and £51,900 to warehouses; the estimates for construction were apportioned, £166,000 to markets, £87,000 to railways, and £150,000 to warehouses. The totals would then stand, estimated cost of markets, £301,000; of railway, £134,000; and of warehouses, £201,900. Neither of these schemes in its integrity appears to have been sanctioned; but a fourth was prepared, which, at present, seems to have the greatest chance of success. According to the architect's plans and elevations, the new dead-meat market is to be built on a site standing back to the north of the thoroughfare from Long-lane to King-street. It is to be 625 feet long by 240 feet wide, and 30 feet high. The total area will be, as before stated, 150,000 superficial feet, of which two-thirds will be devoted to shop space, and one-third to the construction of a main road running north and south, intersected by broad straight thoroughfares. It is to have roads of access on the eastern, western, and northern sides, each 60 feet wide. The basement is to be excavated for a railway station, where trains will bring from the Islington slaughter-houses and provinces, dead meat and poultry, that will be hoisted into the market direct without passing through the streets at all. The estimated cost was £180,000 for construction, and £235,000 for sites and approaches. The warehouses seem to have been abandoned by the City, and that may not be an evil, for if left to private enterprise they will be more likely to prove successful speculations, and to have a higher architectural character. We shall thus have the total cost of the markets £415,000, and even that is likely to be augmented by the delay which has admitted of buildings being erected on various parts of the site, for which compensation will have to be paid when the market comes to be built. This is the price we have to pay for procrastination.

In addition we ought, perhaps, to take into consideration the City's subscription of £200,000 to the funds of the Metropolitan Railway Company. Not that there is any reason why it should not prove hereafter as recuperative a venture as original shares in the New River Company. The Corporation, however, was, it is believed, quite ready to embark in the outlay of £415,000, when came the stumbling block interposed by the wisdom of Parliament. The last Act reduced the tolls from 3s. 4d. to 2s. 2d. a ton on representations made by meat salesmen, which is a gross inconsistency in these days of Free trade, when the doctrines of commercial liberty have been carried so far as to abolish the Usury laws. The pretext for this interference was the protection of the consumer; but the consumer finds from sad experience that the less he is protected the more cheaply he can live, and that his most efficient protection is to be let alone, which leads to unrestricted competition, wherein he finds ample security for his pocket. The Corporation, just as any private individual

or firm, is entitled to a fair remuneration for outlay, and if that outlay is for public convenience those who profit by it ought to pay for it. If, by the interference of Parliament, this fair remuneration be disallowed, capital will not be forthcoming, and the Corporation, it must be remembered, have no available capital, but will have to borrow it to build the markets. The remuneration afforded by market tolls being insufficient the difference will have to be made up in some other way. That is inevitable, and must be clear to the cloudiest understanding, so that we shall have two taxes with a twofold cost of collection to defray one item of cost. In reality the interest of the consumer has not been consulted at all, but the interests of meat salesmen. The toll proposed in the Bill brought forward by the Corporation was a farthing a stone, or 3s. 4d. the ton. The Legislature, at the instigation of the meat salesmen, and on the pretence of protecting consumers, reduced the toll to 2s. 2d. The great economy of 14d. will, suppose the consumer had the entire benefit of it, reduce the price of meat half-a-farthing a stone, or one twenty-eighth part of a farthing in the pound—a fraction totally impossible to appreciate—from which the consumer can derive no benefit, but the whole of which will go into the hands of the salesmen—that is to say, the middlemen.

From evidence given by a salesman before a Select Committee of the House of Commons, it would appear that in Newgate-market 100,000 tons of meat were annually sold. On a former occasion, two years ago, it was estimated at 60,000 tons. Taking the salesman's figures as correct then, the reduction of 14d. a ton in tolls, will put £5,800 a year into their pockets, which is equivalent to a capital of £165,000. Why should the Corporation lose this amount?—or rather why should fresh taxes be imposed or existing taxes diverted from useful channels to flow into the pockets of middlemen, and Londoners made to suffer to that extent for their gain?

Not content with rendering the raising of capital difficult, and the imposition of new taxes probable, the legislature tacked a condition to the Act which up to the present time has operated to prevent the works being begun. Parliament introduced a clause prohibiting the Corporation from opening the market, and railway companies from using the station, until after a street had been constructed 60 feet wide from Victoria-street, at or near West-street, to the new market. The cost of the new street is estimated at £185,000, which would raise the total cost of the markets to £600,000. The Markets Improvements Committee are in negotiations with the Metropolitan Railway Company to reduce the cost of this street by £70,000. Should they succeed the total cost of the markets will stand at £530,000, a figure of sufficient magnitude to justify hesitation, and which we are assured will swell to three-quarters of a million; this we can readily believe with our daily experience of how estimates are exceeded. Fully admitting that the new street may be desirable, it is not proved to be a necessity; nor can it be so when the City architect, who knows infinitely more of the requirements of the case than all the members of the House of Commons united, did not feel called upon to include it in his plans. He provided ample approaches and streets on the three sides of the market 60 feet wide, where 2,400 butchers' carts may stand without interfering with the general traffic of the streets. But no; we are not to have the market till the street is made, which is not imperatively called for, and so Parliament in its wisdom reduces things to a complete dead lock.

Taking the figures as given in the report, with the hoped-for reduction in the cost of the new street, the cost of the markets will be £485,000. To pay the interest on this sum, Mr. Bunning, taking the present rental of Newgate-market to go upon, estimated, after deducting 25 per cent. for repairs, management, and collection, the net income from the new market would be £25,747. A speaker at the last meeting of the Common Council said the income could not exceed this estimate, and might fall to £17,000, on the grounds, we suppose, of an absurd statement which appeared in a former report of the Markets Committee, that increased facilities for the transaction of business by removal would reduce the amount of business transacted. The higher income will pay upwards of 5 per cent. upon outlay; the lower amount will pay nearly 3½, supposing always the estimates should not be increased. Should they, however, be augmented, the interest will be proportionately diminished, and will have to be made up from other sources. There is one point on which explicit information is desirable, and that is with regard to the tolls. According to the evidence given before the Committee, they should produce over £10,000. If they are not included in the rental, they would augment the income and go towards a sinking fund for the gradual extinction of the debt. With respect to City finance, we have long ago in these pages expressed our opinion. While conceding to the Corporation the right to recover its outlay, and until that is repaid to receive fair interest upon capital expended, we submit that it would be desirable to forego the idea of making profit beyond what is required to recuperate, and that it would be better to charge the whole sum in the shape of rental, instead of dividing it into rental and tolls, which must necessitate a double and needless system of collection, and therefore a twofold expenditure.

In connexion with the market between forty and fifty public as well as private slaughter-houses are to be built at Copenhagen-fields on an area of 5 acres 2 roods and 21 perches, or 27,284 superficial feet, with alternate carriage roads and railway slidings between each row of slaughter-houses, and to each of which is to be attached a suitable pound, so that while the animals are driven in from the market on one side, the carcasses of their predecessors may be hung up in the railway vans on the other side. It is proposed to wait until there is a demand before erecting these structures in Copenhagen-fields. Should the scheme be carried out, the appropriation of the locality will contrast with what it was proposed to do with it some time back. Just half a century ago a joint stock company was

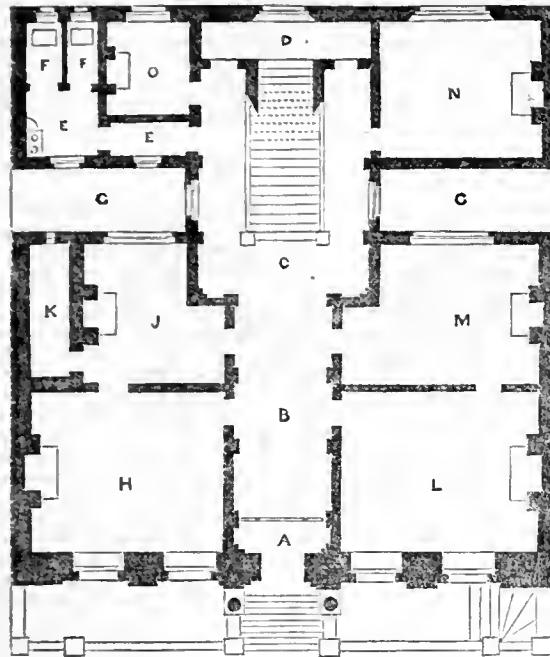
started to convert the fields into a marine bathing place by conveying sea water from the Essex coast to Copenhagen-fields through iron pipes. The capital was fixed at £200,000, and elaborate calculations were published to show that 12½ per cent. would be the lowest dividend. The project did not take, for, thanks to steam, we go to the sea instead of bringing the sea to us.

The architectural design for the markets was severely handled in the Common Council. One gentleman stigmatised it as "the mean and miserable building;" but we apprehend that he would not recommend the Corporation to increase their outlay for decoration which is not likely to be seen, as people do not voluntarily walk among shambles. That the design may be open to the objection of being too low we can readily imagine, for 30 feet in height is too little. The reservoir for air over head will be too contracted, when it is remembered the immense volume of foul stinks that will ascend and which will be likely to be deflected down again. As reference was made to the Paris central markets, we may state they have twice the altitude of Mr. Bunning's design, and we may also add that Mr. Vallance's assertions with respect to the Halles Centrales are altogether erroneous. They are not "fancy structures," but are ten huge sheds connected by covered ways. They are built after the Crystal Palace style, of iron columns tied together and supporting a light zinc roof. The spaces between the columns on the outside are filled up to about 8 feet above the ground with brickwork, and at top with louver boards. They did not cost "more than £2,000,000," nor anything like it, but the purchase of site for the erection of the markets, the construction of the approaches, and the formation of the Square des Innocents have necessitated a large outlay, the amount of which cannot be known, as important works remain to be executed. The tenth shed, or pavilion, as it is called, is included in this year's estimates; next year and after there will have to be executed the completion of the Rue des Halles, the opening of a new street between Rue de la Tonnerrie and Rue St. Honoré, besides widening of Rue Tirechape, and in part of Rue St. Denis and Rue des Lavandieres. Then, although meat is sold in the Halles, the system is quite different to what exists here. In Paris butchers buy live cattle at Poissy market, which are sent to the *abattoirs* to be slaughtered and dressed and afterwards transferred to their shops. Little dead meat, if any, is supplied from the provinces, and there are no market salesmen. Of late years, and since the butchers' trade has been thrown open, meat has been sold by auction—*à la criée*—at the Halles, but butchers do not buy there, or only those who have stalls for retail dealing in the Halles and various market-places of the capital. In fact, we cannot institute comparison between London and Paris markets, and it would, therefore, be absurd to seek to copy them. Paris markets more closely resemble eastern bazaars than ours do, and are an aggregation of stalls of retail dealers who cannot afford to pay rentals for shops, rather than for wholesale transactions, although, of course, they do take place.

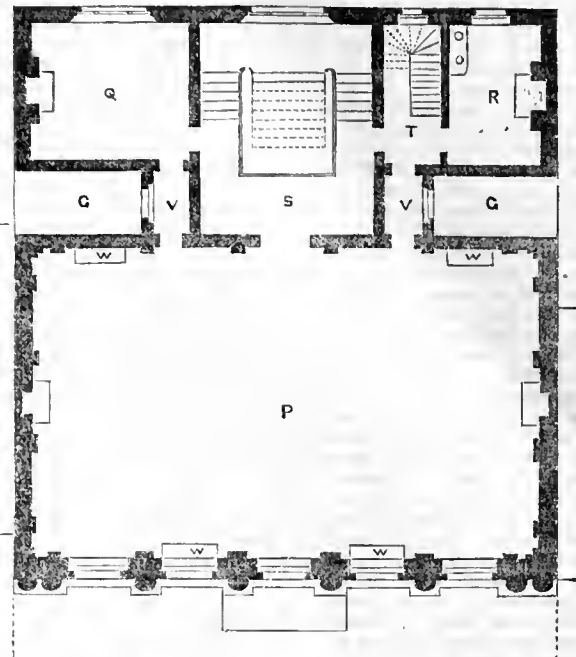
In 1182 Philip Augustus issued an ordinance enjoining Jews to depart from the kingdom of France within three months, confiscating their real property and authorising the sale of their movable effects. This act was the commencement of the persecution of Jews in France, but from the evil sprang the good of exchanges and the origin of banking. The Jews expelled took refuge in Lombardy, where they gave to foreign traders and travellers secret letters to parties in France with whom the exiles had deposited what they could save of their property, authorising payments to the holders of the letters. The convenience was found so great that the stratagem devised to elude spoliation under infamous persecution was introduced into commerce as letters of credit. Out of the plunder of the Jews Philip Augustus built, at the instigation of one of his courtiers, two *halles* outside Paris, 1183, at Champeau, where Louis the Fat had established a fair or market. He bought from the directors of the Leper's Hospitals, St. Lazare, the right to hold a fair that he transferred to these *halles*, which he surrounded with a wall, furnished with gates, that were closed during the night, and he roofed over the stalls. He likewise transferred to the new *halles* the market that used to be held in the *cité*, before the Magdalen Church. The Knights Templars about this time established shambles on their property—for these chivalric monks had no scruples when it was a question of making money—but the butchers' guild complained of interference with their vested rights, and the King reduced the knightly venture to two stalls not exceeding 11 feet in length each. In 1278 Philip the Bold built a portion of the *halles* against the boundary wall of the graveyard of the Innocents, to accommodate "poor women" and "miserable persons" to sell old clothes, shoes, and leather. In 1416 the first meat market was introduced into the *halles*, when Charles VI. ordained the establishment of four *boucheries*—one in the Halle de Beauvais, another near the Petit-Châtelet, a third near the Grand Châtelet, and the fourth round the enclosure of St. Gervais' graveyard and on a portion of the graveyard of St. Jean. In fact, graveyards seemed to have been favorite sites for markets. Under the first Empire most of the existing markets were constructed, and it was a saying of Napoleon that the Halles should be the Louvre of the people; but what he meant by that is not very clear.

THE WESTMINSTER BRIDGE APPROACHES.—The block of houses reaching from the Clock-tower of the New Palace and terminating with Fendall's Hotel, and facing the north entrance to Westminster Hall, is in process of demolition, and it is expected that the whole of them will have been removed by the meeting of Parliament. The whole space between Westminster Hall and the north side of Bridge-street will thus be opened, and from Westminster-bridge a splendid view of the Houses of Parliament, the Abbey, and adjacent buildings will be obtained.

NEW VESTRY HALL, ST. GEORGE'S-IN-THE-EAST.



GROUND PLAN



FIRST FLOOR PLAN

REFERENCES TO PLANS.

A. Lobby.
B. Vestibule.
C. Principal staircase.
D. Lobby and stairs to Basement.
E.E. Passage and Lavatory.

F.F. Water-closets.
G.G. Open courts.
H. Vestry clerk's Public office.
J. Private office.
K. Strong room.
L. Surveyor's Public office.

M. Surveyor's Private office.
N. Medical Inspector's office.
O. Inspector's office.
P. Principal hall and Board-room.
Q. Committee-room.

R. Cloak-room and lavatory.
S. Principal landing.
T. Stairs to gallery in hall, &c.
U.U. Private passages.
W. Coils of hot water-pipes

This new hall, the foundation-stone of which was laid on the 16th July, 1860, was formally opened in August last. It is situated in the Back-road, being erected on a plot of land formerly belonging to the Trustees of the Wesleyan Centenary Chapel, and overlook at the back the burial-ground of St. George-in-the-East, &c., and the London Docks.

The building occupies a site of about 57 feet by 60 feet, and consists of three floors. On the basement-floor (which is partly above ground, and access to which is gained by a flight of stone steps in the area) is accommodation for the residence of the hall-keeper, consisting of parlor, kitchen, scullery, coal place, pantry, cellars, strong-room, boiler-room for the hot-water apparatus, &c. The ceiling under the principal stairs and entrance-hall is formed with brick arches, plastered, springing from cast-iron girder, the haunches being filled in solid with concrete to carry the Portland stone floor above. The staircase, hall, and cellars, are paved with York stone, the stairs being of the same material.

On the ground floor are an entrance-hall and vestibule, spacious stone staircase to the principal floor, vestry clerk's offices (with fireproof room), surveyors' offices, and offices for the Medical Officer of Health, Inspector of Nuisances, &c. This floor is supplied with water-closets, urinal, and lavatory, the whole being well lighted and ventilated.

On the principal floor is a large hall 54 feet 6 inches by 33 feet, the whole height being 24 feet. A gallery with two tiers of seats runs the whole length of the hall at the back, and is approached by a distinct stone staircase, access to which is gained from the principal landing. On each side of the principal doorway to the hall, are the smaller ones, leading to the committee and cloak-rooms. Over these are three bed-rooms for the hall-keeper. The cloak-room is fitted up with a lavatory, &c.

Provision is made throughout for heating and ventilating. The latter is effected in the large room by two shafts running from the ceiling to above the roof, securing two separate currents of air. The whole of the rooms have open fireplaces. The hall staircase and entrance hall are heated by hot water.

The decorations of the entrance-hall consist of Doric pilasters and entablature supporting a panelled, coffered, and moulded ceiling—the same arrangement being carried through to the staircase, the landing over having a coffered ceiling in one panel, with a bold enriched flower in the centre. The mural decorations in the large hall consist of moulded panels between Roman Ionic Pilasters, the caps of which have wreaths of foliage suspended from the horns of the volutes. The pilasters have a base and pedestal, the mouldings of which are continued round the room, the dado being panelled in wainscot. The ceiling, coffered and panelled, springs from a deep cove; the centre panel has an enriched marginal moulding, with scroll centres and corners. The panels flanking it are formed of perforated ironwork, the foliage pattern of which is well executed, with central rings which receive the sun-lights by which the hall is illuminated, and which materially assist the ventilation of the building.

The general features of the front are Italian in character. The front elevation, of Portland stone, shows three stories, the two lower of which are rusticated. The principal feature of the ground floor elevation is the porch, which is formed of Doric columns and rusticated pilasters, carrying an entablature with triglyphs, &c. The doorway is deeply recessed with moulded jambs and architraves, and

has a circular head, the tympanum of which is filled in with elaborated wrought-iron-work. The spandrels are to be occupied by medallions. At the foot of the steps leading to the porch are two sub-pedestals to receive an ornamental cast-iron balustrading and bronze lamp standards.

The upper and principal floor is divided externally into five bays by attache Ionic columns, being coupled at the angles; the entablature is surmounted by double blocking course, broken over each column and finished with a ball. The jambs of the windows are formed with pilasters with foliated capitals, carrying an enriched entablature with cushioned frieze. The window heads are circular with archivolts and keystones, the tympanum being filled in with sculpture. The panels beneath the windows are filled in with moulded balusters, the pedestal, moulds, &c., of the columns being continued across the façade.

The whole of the works have been executed by Mr. Thomas Ennor, by contract at £4,675, under the superintendence of the architect, Mr. Andrew Wilson.

THE NEW MIDDLE TEMPLE LIBRARY.

THREE or four months ago the Prince of Wales publicly opened the new Library which Mr. Abraham has designed and Mr. Myers has built for the Honorable Society of the Middle Temple. In our Volume for 1860, at pages 330 and 647, we gave full descriptions of the work; and at page 139 of the Volume just completed we engraved a view of the river-front—then misnamed the "Inner" Temple Library. We now publish a view from the north-east, showing the principal entrance.

The main apartment is 85 feet long by 42 feet broad, and occupies the whole of the principal story. Its sides are lined with bookcases, and in the windows over them blaze the arms of the various Treasurers. All the work is executed in the best manner: the metal work is by Hart; the glass is by Ward, of Soho. The stone carving of Mr. Myers needs no word of praise; it is well known, and its excellent quality is universally acknowledged. The building is altogether, perhaps, the best specimen of modern Gothic work to be seen in a civil building in all London.

VALUE OF REVERSIONARY PROPERTY.—A reversionary life interest was offered for sale at the Auction Mart, by Messrs. Chinnock and Galsworthy, comprising the Frampton estates in Dorset, extending over nearly 8,000 acres, with a rental of about £10,000 per annum, together with a present life interest of the reversioner, aged 23, in £400 per annum, and £1,600 per annum on the decease of a life aged 47, secured upon the above estates, the gross rental of which does not fall to the reversioner until the decease of the life 47, and another aged 52; the contingency of the young life surviving the two elder had consequently to be insured. The reversion was sold subject to a mortgage of £5,000, and the price realised was £11,150.

A FEW SUGGESTIONS FOR 1862.

THE assertion is constantly made that it is the fashion with Englishmen to "run down" their country. To do this without cause would be senseless, as well as unpatriotic; but it often happens that there are real grounds for fault-finding, which may, and frequently does, imply a readiness to examine and amend. The tendencies of man are naturally towards himself: his family, his neighbourhood, and his town or province are apt to be in his eyes the most important objects in the whole world. Though this purblind affection may be pushed to absurd lengths, it has its favorable side, for from the seeds of self-love and local interest are thrown out the strong and deep roots of patriotism. Homely minds may be stigmatised as petty and narrow, but they need fear no comparison on the score of practical usefulness with those larger souls which range over the universe, and, finding no resting-place for their sympathies, return empty.

Grumbling, so that it be not done in a merely captious, querulous frame of mind, but with an honest desire for progressive improvement, is a good symptom in the body politic. It is our bounden duty to survey, from time to time, our position, and, instead of blindly maintaining that whatever is done by us is and must be right, to see in what we fall short—not of the state of other nations, but of the standard capable of attainment in a civilised community. In a survey of our national condition we must own that we are generally found unprepared, be the occasion great or small, and might speak of our country as "England the unready." A very brief review of our late history would show this to be true; and even now, in the critical posture of our relations with the Northern States, is it certain that we are ready with men as well as with ships? Official statements would make it appear that we are. Let us devoutly hope so, and add the fervent prayer that, if it be at all consistent with national honor, the black cloud which impends over us may yet burst without the thunder of war and the hailstorm of injury to our accumulated savings—our wealth and prosperity. In the face of the great and tremendous interests at stake, it may seem trifling to descend to civic minutiae; but, be the event as it may, the daily life of England will go on much the same, and there will be time and opportunity to attend to matters of a purely social and domestic character. We propose briefly to consider what preparations can be made for the vast influx of persons whose presence in London we may reasonably expect in the coming year, and to offer any suggestions which may occur to us.

It has been observed how much the population has changed in the ten years which have passed since the former Exhibition. The children of that period are men and women now, and there has absolutely arisen a new generation. From the great increase in the mere numbers of the people, aided by the facilities of travelling afforded by the opening of many more miles of railway, we may look for a great crowd of visitors. The power which we already possess of accommodating an immense floating population may be pressed beyond its limits, and we should do all that is possible to allow of their expansion. Doubtless the eyes of lodging-house keepers have been dazzled already with visions of crowded houses and high charges, accompanied by those pickings (*not stealings*) so familiar to all those who have fallen into the clutches of certain harpies of the fraternity. It has always been a subject of wonder to us how people could have the audacity to charge, and others could be guilty of the incredible folly of paying, for very inferior lodgings, the exorbitant sums which are evidently quite the usual thing in "good" neighbourhoods. Despite the lash of the satirist, there is still a hankering after "Mews-street, Grosvenor-square." Season after season the same dusty, grimy webs enmesh the motils of fashion; and families, rather than pass out of a charmed circle, are content to inhale a stifling atmosphere, in small, inconvenient rooms, encumbered with old and heavy, or decked with modern and tawdry furniture.

Others, however, imagine that they have no choice, and submit to discomforts in sheer ignorance of whither else to go. Here is a want that might be supplied. The more reputable and fair-dealing of lodging-house keepers should endeavour to meet the tactics of their flitching and loud-mouthed opponents, and adopt some method of making more generally known what accommodation is to be had, and at what rates. At the same time, householders generally should guard against running into an error committed by some in 1851, who, reasoning probably from their own experience of "seasons" in watering places, thought that, by exhibiting in their windows cards, notifying that "apartments" were to be had, they would have numerous applications, whereas many well-deserving persons, who could have honestly guaranteed "all the comforts of a home," could not let their rooms at all. We should dissuade private individuals from undertaking to let apartments, if only for the simple reason that lodging-letting is a business, and one by no means easily learnt. There are real trials to be undergone, arising from the caprice of some who want in lodgings more attendance than they are in the habit of screwing out of their servants at their own homes, and from the mischief of those who are utterly reckless in the use of other people's property. So that there is some allowance to be made for the hard bargain driving and vulgar insensibility of the drabby Mother Pendragons.

London is so vast that anything like a search for apartments is impossible. Well known streets, like those on the river side of the Strand, are usually in a state of plethora, while other districts are comparatively untenanted. Few persons, acquainted with the locality, would select the Strand for a residence, except for its business situation; and it seems to present few attractions to a visitor on a trip of pleasure. The incessant wheeled traffic—or, almost incessant, for there are only about two hours in the early morning of comparative quiet—by no means points out the quarter as one of the most eligible in London, apart from the consideration

of its proximity to the Thames, which, under the influence of the summer sun, emits an odour more pungent than agreeable. It is from the extortionate rents—in proportion to the accommodation given—of the west-end houses, with their miscellaneous extras for plate, linen, attendance, &c., on the one hand, and the distracting din of streets near crowded thoroughfares on the other; that many of our country visitors form their opinion, and go back to their homes heartily sick of London. Surely, dirty and dear as town is, we might have something better to offer than is usually found.

Take again the hotels. If a friend asks one to recommend an hotel, what answer can be given? A very unsatisfactory one, for almost all those that are good for anything obtain high prices, and are suited only to wealthy birds of passage. More hotels on a better system would be a real boon—say, for a known example as the Pavilion, at Folkestone, with two *table d'hôte* dinners, one early and the other late, per day, at moderate charges, and with a variety of dishes. The whole question of hotels has been so recently brought before the public that we can have nothing new to say, but we may endorse the statement that hotel keepers should give a tariff of prices, *including* attendance, so that an iomate may really know the end of his expenses. Something has certainly been done in this direction; but the majority of landlords in town and country seem not to think it their interest to be too candid as to their charges, and the result is what one would naturally expect, that any one who is obliged to travel, contrives to manage his journey so as to have as little staying at hotels as possible. Something might be said also about choice of food. Who is not tired of hearing in reply to one's inquiry, "What have you in the house?" "We have some very nice corn beef, Sir; or we can get you a nice chop or a steak, Sir." This sort of dialogue, however belongs chiefly to the small towns, which had better bow to their fate, turn their four or five hotels into museums, libraries, or reading-rooms, and leave one or two proprietors, who could give all the accommodation that is ever likely to be required. The railways have sounded the knell of hotel keeping in small places which are ordinarily visited only by a commercial traveller or so, who hurries away as soon as his business is completed. The bagman's trap even is become a rarity since railroads intersect the country in every district in which there is any trade to be done.

What shall we say to the omnibuses? The magnificent promises made by the Great Monopolist Company have been but ill-fulfilled. Some new omnibuses have been placed on some roads, but only by pressure of competition with a rival company, which gave the public for the first time a really convenient vehicle. We have not forgotten that, with the opening of the former Exhibition, began an increased scale of fares. Then we had the *fourpence*, which is still kept up for intermediate distances. The fares want a thorough re-arrangement on some more intelligible plan than is in use at present; so that every one may know what he is to pay. It is all very well to say that if you have any doubt, you should read the list of fares inside the door. Any hesitation would call forth the inevitable—"Now then, Sir; if you please, Sir; when you are quite ready, Sir." Moreover, this list is made specially bewildering, and designed, as it would seem, to catch sixpences instead of the lower rates. One passenger may pay sixpence for a distance which another may exceed five times for a smaller sum. We might certainly take a hint from our neighbours, and have the word "Full" put up when there is no room inside, and thus obviate the unpleasantness on a wet evening of a dive into the mud—and such mud!—only to find that there is a pleasant seat in front, where, as the conductor suggests, "You can have the apron up."

Although the cabs are much improved since they have been more completely under the control of the Commissioners of Police, there still remain many wretched four-wheelers, drawn by animals which are skin and bone, and whose legs are knocked to pieces by hard work over "the stones." The remedy lies mainly in the hands of the public, who need not hire dirty, ill-appointed cabs. In all ages there has been something in the handling of the whip favorable to trickery and imposition, and a driver was always a favorite object for public anathema. With a regulated scale of payment, and accurately measured distances, there ought to be no overcharge. This is fostered, if not created, by persons who think it mean to pay only the proper fare, although it would be well for them to remember that the extra shilling or sixpence, which is nothing to them, is really a considerable tax on the slender means of others.

The taking of cab-tickets seems almost entirely to have ceased. It is certain, at least, that a driver never voluntarily offers one to his fare; and yet this delivery forms a valuable method of identification. It would be a curious branch of statistics to learn the number of small articles, such as umbrellas, parasols, opera glasses, &c., that are weekly left in cabs and lost altogether. It seldom pays to advertise them and give a reward on their being brought back, whereas the ticket at once ensures their repossession. If the ticket has fallen into disuse, its revival would seem very desirable, and might be attempted by those who are not above taking a little thought for public benefit.

Needless perplexity is caused by the repetition of numbers in some streets. Notably, there is Oxford-street. The numbers on either side of 260 occur over and over again. This seems to be nobody's business, but, perhaps, calling attention to the irregularity may induce some one to take up the matter. It is a disgrace to us that one of our principal thoroughfares should be so neglected. The names of streets have been legibly painted, with the addition of the letters indicating the postal district. So far well; but the various parish authorities might carry the notice a little further in some cases, and write up the direction in which the street leads. For example, Orchard-street corner should have "leading to Baker-street

and St. John's-wood;" Edgware-road, "leading to Maida-hill and Kilburn."

Few persons who have been abroad have not at some time or other found out the usefulness of a *valet-de-place*. He knows the principal objects of interest in a town, and the hours of the day at which they are to be seen. He hires a cab, or conducts you on foot, according as you wish to get through sight-seeing quickly or not. Here would be an opportunity of employing such persons as the Commissionaires who may be of good character, civil, and intelligent.—The rate of payment four or five shillings per day.

For those who prefer to find their way by themselves there should be a *thin* book, similar to the "Practical Paris Guide," which shows you how "to see all that ought to be seen in the shortest period, and at the least expense." A skeleton description of public buildings should alone be given, furnishing an idea of the salient features, with minute particulars of charges of admission. A tabulated statement of the prices paid for different parts of the house at the theatres, and the hours of full and half play would be found useful; for this is the kind of information difficult to get at the moment when it is wanted, and least likely to be forthcoming from any one at hand. The more remarkable churches, including the most recent, should have a brief notice. Few, even in the architectural profession, are acquainted with the Gothic and antiquarian remains in the City; and there is a general ignorance as to the burial-places and monument of celebrated persons, except those in the Abbey and St. Paul's. If the compiler would seize the points which his own experience has suggested as "practically" necessary, and endeavour to supply the wants which he himself has felt, the result would be most valuable. Some attempt might be made to unravel the mystery of distances, and to give them within main points, of which a chief one would, necessarily, be the Exhibition. It remains to be seen what arrangements will be made for dinners at the Building; but, as strangers will visit other parts of London, something might be said about "where to dine." Under this head, we fear that there will be little to praise or recommend. For its size, London is most indifferently supplied with dining-houses—not, indeed, as to number, but as to quality. With a few honourable exceptions, which might almost be told off on the fingers, they are squalid and close—places wherein "to feed and not to dine." In the majority of them, it would be anything but appetizing to inquire how it happens that joints are kept so constantly ready.

We may have another opportunity of considering more fully one, or more, of the topics here hastily run over, and content ourselves for the present with having touched upon some matters which are not unworthy of attention, inasmuch as they tend, in proportion as they are observed or neglected, to add to or subtract from the stock of reasonable comfort within reach of ourselves, as well as of those who may be induced to visit London.

DOINGS IN NEW SOUTH WALES.

In *Sydney* and its environs several large buildings, both for public institutions and for commercial purposes, are in course of erection. The labor market has been for some time favorable for building operations, but contractors are now unwilling to engage in large works, owing to the rush to the New Zealand gold-fields being likely to cause a scarcity and a consequent rise in the labor market. One of the largest buildings in progress in Sydney is the New Roman Catholic College, in the University enclosure. The foundations are all in, and a portion of the wall is up to the second story. The building was designed by Mr. Wardell, the present Colonial Architect in Melbourne, and the work is being carried out under Mr. Blackett. An extensive building has been commenced—the Destitute Children's Asylum at Randwick. A new wing, 175 feet by 45 feet, and three stories in height, and also a continuation of the front of the building, are being built. The cost of the additions will be about £9,000. The brickwork of the Sailors' Home, in Lower George-street, is completed, and the roof is being put on. There is an aspect of incompleteness about the building, owing to a portion only of the design being at present proceeded with. The works now in progress will probably be completed in the course of next month. The extension of the Australian Museum from the end of the present building to the boundary of the land adjoining the Grammar School is to be proceeded with. The new wing will be 200 feet in length by 40 feet in width.

At *Hobart Town*, amongst the city improvements which are rapidly progressing, is the new Museum of the Royal Society, which is being built in Macquarie-street, after designs by Mr. Henry Hunter; while on a site immediately adjoining the Museum the new Town Hall will be built; designs have already been called for by the city corporation. On the same line of street stands the site of the proposed monument to Sir J. Franklin, for which Parliament has voted £1,000. The new Survey Office is in progress, and the new Post Office, adjoining the Supreme Court buildings, is approaching completion.

At *Nelson* buildings are rapidly rising. There is a new Baptist chapel in Hardy-street, a hall in Bridge-street for the Young Men's Christian Association, the Teetotal Hall now building, and the Nelson club-house recently erected by Mr. Everett, 60 feet by 50, and 21 feet high, containing on the ground floor nine rooms and on the upper story nine. Those on the ground floor will be used as dining, coffee, and bed rooms, and on the upper story there will be billiard-rooms, bed-rooms, and a reading-room. A large store has been erected by Mr. Symons in Trafalgar-street, and in almost all the principal streets houses are now in course of erection. The sewer through Trafalgar-street is finished, and the old unsightly ditch is filled up.

The decennial return of the expenditure of the Victorian Government in connexion with public works and improvements shows that the total sum thus expended during the years 1851 to 1860 amounted to £2,713,129, of which sum £1,741,472 was provided from the revenue, and £971,657 was paid from loans raised for the construction of reproductive public works. The average yearly expenditure during the past five years has been £395,704, against £145,921 in the previous similar period. Telegraphic communication, it is

stated, is now established with all the principal cities and towns in the neighbouring colonies of New South Wales and Victoria in connexion with lines throughout the settled districts of this province. At the close of 1860 twenty-six stations, 529 miles of line, and 652½ miles of wire were opened. The revenue of this department is rapidly increasing, whilst the facilities and conveniences it creates are largely being availed of.

To the foregoing we may add the following from the *Engineer*:—of Assembly. The amount required to defray the estimated expenses of the Government of New South Wales in 1862 is £3,356,818, against, in 1861, £1,354,040. The increase in the amount required this year is, therefore, £2,002,778, the augmentation being in great part owing to the railway scheme and other public works in the department of the Minister of Works, which absorbs no less a sum than £1,997,184, proposed to be raised by loan. The works and railway loan is to be expended in the following manner:—Valuation of land, railway works in progress, and proposed extensions, £1,707,134; the construction and maintenance of the three main roads, and erection of bridges, figures for £160,000; public works and buildings, £65,000; and improvement of harbors and river navigations, £33,000. In the estimates for the maintenance and construction of main roads in the colony, the amount of £50 per mile has been put down, together with sums for bridges, culverts, and other special works, which amount altogether to another £50 per mile.

A new and substantial bridge at Camden, christened the "Cowper Bridge," was completed and open for traffic in the summer. The bridge at Fallbrook, on the Northern road, opened last year, has been maliciously destroyed by a gunpowder explosion. The work is being renewed by the Government. A lighthouse at Port Stephens, which is in progress under the Colonial Architect, has been advancing very slowly. The cause of the delay has been the unfavorable state of the weather. The lighthouse is to be 60 feet in height; at present the building is only up about 25 feet, and the work will not be finished before the end of the year. The lighthouse at Eden is nearly finished. The formation of the new harbour at Wollongong is proceeding rapidly, under the engineer for harbors. None of the tenders being considered available, Mr. Gibbons, who recently carried out some of the railway contracts, was appointed to superintend the work. About 9,000 yards of stone had been excavated in October, and the work would shortly be ready for commencing the new basin. Preparations have also been made for commencing the harbor works at Kiama, which will likewise be carried out under Mr. Gibbons. Temporary sheds and buildings for the accommodation of the workmen have been put up, previous to starting with the excavations.

The Minister for Works lately stated in the Assembly, in justification of the course taken by the Government in declining to give contracts where the works could be more advantageously carried on under their own officers, that while the estimate for the harbor works at Kiama was £30,000, the lowest tender sent in was £115,000, and that subsequently an offer had been made by Mr. Gibbons to carry out the work for the estimate. The works for the improvement of the Moruya river, which were contracted for by Messrs. White and Co., have been commenced. The principal work in progress at Newcastle is the continuation, both eastward and westward, of the public wharf, which already is about 1,300 feet in length, and which will, upon the completion of the contracts now taken, extend for 1,740 feet. As a preliminary step to the formation of the breakwater from the north head, a small wharf is being constructed within the harbor, where ballast will be deposited, to be conveyed upon a temporary railway to the breakwater. The sum of £5,000 has been voted for the work, and another sum of the same amount is placed on the estimates for the year. Tenders are about immediately to be invited for works for improving the navigation of the Clarence river. The total cost of the works is estimated at £117,237, but at present only £20,000 has been voted by the Assembly. This sum is about to be expended in the construction of a breakwater, 1,000 feet in length, to run from the south head in a north-easterly direction. The stone will be obtained from a sandstone quarry at a short distance from the head, and will be conveyed along a temporary railway. A weighbridge will be provided by the Government, and the contractor will be paid according to the amount of ballast deposited. A timber staging will be run out for the required distance and rails laid upon it. Ultimately the length of the breakwater is to be 2,000 feet, and another breakwater is to be run out from the north head. A suggestion was made that a penal establishment should be formed at the Clarence River, and that the works should be carried on by convicts. It has, however, been determined by the Government to employ free labor. Surveys have been made by the engineer for harbors of the Richmond and Macleay rivers, with a view to carrying out similar improvements.

CHURCH ARCHITECTURE.—The Rev. J. S. Hodgson, before concluding a recent lecture at Chester, remarked upon the glaring absurdity of some modern churches having been built in the Medieval style, with galleries so erected in aisles that the occupants could not hear the preacher's voice—blindly adopting the plans of Medieval architects and then spoiling them by awkwardly endeavoring to accommodate them to modern requirements. It must, however, be remembered that a church might be built in the purest style of Gothic architecture, without a scrap of Romish furniture about it. The chapter-house of a cathedral, in which the voice of a speaker could be distinctly heard by every one present, might be as pure a specimen of pointed architecture as the cathedral itself, and if modern architects would study such gems of art, and consider that they had to build churches in which the congregation might join in the prayers which the minister audibly utters, and be instructed, exhorted, and persuaded by the preacher, we might expect edifices to be erected fitted for the age in which we live. A Protestant congregation would not see around them miserable imitations of superstitious contrivances, but meet for the worship of God in buildings every part of which satisfied the most fastidious taste, without being offensive to the most sensitive disciple; the edifices would bear upon them the marks of unity of purpose and simplicity of design, and thus show that they were erected by men who understood the principles of their art, and were not blind imitators of the works of a former age.

NEW LIGHTHOUSE FOR THE WELSH COAST.—At a recent meeting the Mersey Dock Board decided to lease a site, on the great Ormeshead, for a new lighthouse. The cost of the edifice will be £5,000, and the annual charge for maintenance £380. Mr. J. B. Hartley, C.E., has presented a design for the lighthouse.

A FEW DAYS AT CHARTRES AND OTHER FRENCH TOWNS.*

THE circular windows in the nave afford examples of the plainest and richest kinds of pierced work; the roses in the heads of the clerestory windows, some 17 feet in diameter are pierced with good patterns in the simplest manner out of large slabs of stone; there are similar windows, but smaller and richer, in the cloisters at Leon, where the large rose in the north transept is one degree more ornate, having a graduated series of mouldings to the different openings. The west window of Chartres, over 30 feet in diameter, is still more richly ornamented; but both this and the clerestory windows look mean when seen from the interior, in consequence of the glazing having been placed so near the inner face of the walls; the west window especially has none of the noble effect of the exterior view, but looks like a set of isolated holes; and it is not pleasant to see this and the clerestory windows, where the roses are too heavy for the lights below them, so dependent on the stained glass for general beauty of effect. I suppose it would be impossible to find a building-stone of better kind than that used at Chartres, whether as regards its durability, its color, or fineness of grain; it is similar in appearance to a lithographic stone, and so tough and fine in texture as to place no limit to the minuteness of the carving. The columns in the western doorways contain strings of pellets no larger than the heads of pins, and many of them are now almost as clear and perfect as when carved seven centuries since; while those parts of the building much exposed to the touch have taken a polish like alabaster. I exhibit specimens of this hard stone and some others of softer kinds in use at Reims, Paris, and elsewhere. One kind very much used is the rock answering to our chalk, which, though with us so soft and white, is there of a good grey color, and so durable that I was frequently unable to detect in old work any signs of its having decayed away more than the flints that are embedded in it.

I believe no grand cathedral of the best age has all its towers complete, and of the same date. Reims has some fine specimens, wanting their crowning spires. Of the seven designed for Leon four are tolerably perfect, except the spires. Chartres was probably intended to have nine, in all of which only the two in the western front were ever completed. They are carried to the height of the springing of the gable, of similar general design, though, as usual in such cases, differing considerably in details (see the spires of St. Etienne at Caen, and those of the Cathedral at Bayeux). No doubt the one latest built had the benefit of any improvement suggested by the view of its senior companion; and it is worth while to notice the small amount of scruple with which this kind of thing was constantly done, as if it were by no means necessary to make a sacrifice for the sake of uniformity, even in a church without aisles, where the windows on the north side were three-lights, those on the south were made, very sensibly, in two-lights, and the difference was not so noticeable as might have been expected. Of these two spires, that on the north is of the sixteenth century, and, of its kind, handsome and in good proportion to the building. The south tower and spire, being older by half a century than the body of the church, are much too low for it, although, in themselves, a far more beautiful composition than that on the north.

Looking at the upper story of this tower, immediately below the octagonal stage, there seems to have been a careful preparation for some superstructure of a different kind to that which now surmounts it; the design of this portion is such that we might expect, at least, a short blank story before the commencement of a spire of any kind, but the arrangement of the windows and buttresses has no reference to what is to follow upon them; and the spire and octagonal stage, richer in all their details, stand with piers on the heads of the windows below, and openings close over all the lower buttresses. Still, the general outline of this tower and spire is admirable, and, in distant views of the town—from east or west, the cathedral stands out over everything very magnificently. I shall not soon forget the effect of its dark mass against the sun-rise as I left it on my way to Le Mans.

I could spend no more than part of one day at Le Mans, during which I saw, besides the Cathedral, some of the dirtiest, darkest, and most wretched holes that can anywhere be tenanted by human beings. I explored it a good deal just after a shower, unfortunately, that brought out the sickly tints and enhanced the flavour of things; it was the only time that I saw in its worst aspect the system of drainage by open gutters by the side of other symptoms of neglect and ruin. But there were a good number of picturesque and some richly ornamented fronts of houses that had seen better tenants. There are fine open spaces also, and a large and lively market-place, almost every house in which is a café or hotel. In the Cathedral, the interior view of the choir, with its double aisles and radiating chapels, was the most spacious and lightsome of any I had seen. The construction of this portion is very interesting; externally the chapels form a very pleasing group, but the forest of pinnacles rising above them with the flying buttresses, though very ingenious, have a painfully confused appearance. Here is a twelfth century portal on the south side similar to the west doorways at Chartres, and very old Romanesque work, patched with later Romanesque in the nave. The church of Notre Dame de la Coultrure, into which I could do no more than look for a few minutes, has a very peculiar twelfth-century nave, without aisles, but with large wall arches springing from the base of the vaulting shafts and enriched with ball-flower and other small ornaments: there are some small arches of brick and stone placed alternately, and very tall, stilted, round-headed arches round the east of the choir. The naves of both these churches are divided by heavy cross arches of square section into large compartments, and in each is a dome-like cross vault. This vaulting and other portions of the construction belong to a type that I did not see represented elsewhere. I should have been glad to pass a longer time there and also at Sées, which is very accurately described in "Murray" as a poor little city. There is in its cathedral much that is worth study: it has good thirteenth century chapels; its fine portico has had its statues carefully hacked away and all the foliage broken. It has been preserved from falling to pieces by new buttresses of which I sketched one rather picturesque group going round the angle of the north-west tower, rather elegant, but cold from the character of the details.

There are in Le Mans and Sées plenty of quaint figures and costumes in the streets, and, as in all the towns, I saw much life and gaiety, and much dismal country for many miles between them. In such restorations of churches as I saw, colors were being rather freely applied to the walls, and not with very good effect. With respect to the finest specimens of polychromy that I saw, that in the Sainte Chapelle at Paris, I think the painting and gilding that there cover every part of it, confusing the forms and destroying the light and shade of the orna-

ments, are much to be regretted. Still less defensible is the tricks which I saw in two or three places, of lining the wall panels with ornamental encaustic tiles, and painting upon them lines to represent the folds of hangings. The floor of the Sainte Chapelle, composed of hard grey stone, out of which patterns have been sunk and filled with colored cements, was pleasant to walk upon, more so than are ordinary encaustic tiles. There is great variety in the floors and pavements about the French towns, colored marbles in patterns are frequent in shops and entrance-halls of private houses, and the ordinary hexagonal paving tiles have a pleasant effect in many cases. I saw but one manufactory for them, and that of the rudest kind; the clay was being tempered by men's feet, and the men—it was rather difficult to say—but I think they would have been naked, but for the clay in which they were involved.

Strolling through the street there is in every day architecture much matter for observation, a general tendency towards neatness, and good taste in the arrangement of the more modern shops. I saw sometimes in lanes where only one cart could pass elegantly decorated establishments, the white and gold and the looking-glass of which would, if moved to our Regent-street, be much admired. The cafés were often very splendidly decorated; one café chantant, in which I could scarcely find a place amongst some hundreds of men in blouses, was well arranged and of a light Italian character; it might have been made exceedingly showy and vulgar by the use of a few bright colors but, being kept white with a very sparing use of gold, it was as elegant as any drawing-room. I do not say that this color would always suit our colder climate, or stand so well in our damp atmosphere, but as they were situated nothing could look better or more quietly cheerful. In one little town there were shops which had frize and dado of black marble with incised and gilt letters, and even a slab of marble attached to the lower side of the door. The handsomest shop that I saw anywhere was that of a butcher near the Madeleine, in Paris; every part of it is appropriately ornamented from the floor of colored marbles to the enriched ceiling; the marble slabs in the windows and even the blocks are cut in ornamental forms; a large fountain plays in the middle, business goes on quickly, and there seems to be much of it, and one may hope that somebody is reaping the reward of his enterprize in bringing so much of art into connexion with this least poetical of callings.

The large works of reconstruction now being carried on in Paris furnish many useful hints, especially with respect to the system of fireproof construction, a system that one would be glad to carry out more generally in London. The joists are lighter than with us, they are readily put together, and the workmen execute the brick filling-in roughly and quickly, and they cut and trim them to any variety of plan with great facility.

Three stout rolled girders strapped together form sufficient bressummer for the ordinary spans used in shop-fronts, and flat arches in stone are turned over narrower openings, with sometimes stout iron bars passing through them.

Any one studying iron construction and workmanship will find plenty of matter, especially in the lighter kinds of work. The roofs of the railway stations along the line to Strasbourg are good specimens of flat girders in very light angle and T iron. The station at Le Mans has a trussed roof of very good ornamental character; the putting together and finishing generally are very neatly executed, and they probably remain longer uninjured by rust than in our climate. On this point, however, the most interesting matter I saw was the coppering of the fountains and lamp columns in Paris; there seemed to be a good thickness of metal deposited, and if the expense is not too great, we may hope that the rust, which is the chief objection to the employment of ornamental ironwork, will in future be prevented. I think Leon seemed to have more of the workers in iron than most places, but in every town, I was always coming within sound of their files and hammers. Many articles, such as we usually get from Birmingham, seem in these French towns to be home-made, and I think there is great advantage in having workmen accustomed to the finer kinds of ironwork always at hand, as the architect can have his designs carried out under his own inspection, and study its effect as it proceeds.

The tools with which the masons work the grey chalk stones and oolites are quite different from those in common use with us. How far this arises from differences in the texture of the stones you can judge from the specimens. Much work is done with the toothed axe in hewing the blocks roughly into shape and working the faces; the "clustered pick" beats the face and mouldings to something like their finished forms, and they are then finished with the plane or rubbed with a kind of grater. Where I could judge at all I thought the work was got through rather quickly, and I felt some surprise that one or two of these tools are not used in London; I have been told, as to one of them, that "the Union" has forbidden its use amongst the soft-stone masons, but I hesitate to believe anything so monstrous. Usually, all mouldings are wrought after the building is finished. I frequently saw houses intended to have elaborate fronts, some portions of the carvings had been executed as patterns some years back, and the remainder was left to be finished at another time. Generally, the beds of stones were not very finely wrought, and they were set in a rather thick layer of mortar. I think there is often an advantage in this, as in very plain buildings it is a pity to spend money in making every part neat and smooth, which will only render the poverty more apparent.

I usually contrived to spend an hour in the public libraries and museums with which the towns are furnished. At Chartres, which has 18,000 inhabitants, there are three rooms and corridors filled with pictures, antiquities, and objects of natural history, very well exhibited. They were always very easy of access, and I could not help calling to mind one or two museums I know of in fair sized towns, where I, a passing traveller, have discovered with difficulty that I could in no wise see their case of dusty birds and their barrow-load of uncatalogued minerals, except on payment of sixpence—next Tuesday. But some of our towns are making efforts to establish good museums, and I should think they will find them most valuable to themselves, and send the stranger away with a pleasant impression of their civilisation, liberality, and old associations.

I think many of us find the opportunities of studying English Medieval architecture, for a few days at a time, occur rather frequently, and on those rare occasions when we can get from town for longer periods wish to see something of continental architecture. I may state, for the information of such as wish to know, that I found the difficulty and expense of travelling much less than I anticipated. There is great regularity in the style of living, if you fall into the ways of the people. I generally stayed at the best inns, lived as expensively as the best of the people with whom I met, never disputed a bill, nor had reason to think I ought to do so, and I am sure that a tour in England would have cost me more money. If I may judge from a short experience, I should say there is no place

* Continued from page 1016.

on earth where you may go about under less fear of restriction while you are careful to avoid interference with the service of the church or any other cause of offence. The ecclesiastics seemed to take a pleasure in giving such information as they could, and when there was a regular official appointed for that purpose his fee was small. There seemed to be no objection to one's going anywhere for the purpose of sketching. I was now and then invited into private gardens for the sake of getting a better position. Ordinary passers-by generally apologised if they were compelled to obstruct the view, and nobody felt any delicacy about looking over the drawing or attempting to read the notes, but it was done civilly, and I think was intended as a compliment.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.

DR. DRESSER ON THE ART OF DECORATIVE DESIGN.

THE second lecture by Dr. Christopher Dresser, of Hammersmith, on the "Art of Decorative Design," was delivered before the Society for the Encouragement of the Fine Arts, on Thursday evening, the twelfth ult. There was a numerous attendance, and the chair was occupied by Mr. HURLSTONE. After referring to grades in decorative art, and in illustration of his subject, the Lecturer said:—

I suppose that the object which we have in teaching writing in our schools is that of enabling mind to communicate with mind, and spirit with spirit, when the bodies in which they dwell are somewhat widely separated by space or time; the secondary advantages—resulting from an increase of power over the hand and a more careful mode of thought, which writing induces—may also lead us to infill this task of learning to make and arrange characters on paper upon our children; but the primary object is that of enabling them to pass their thoughts through space, and hand them down through time in order to instruct, gratify, or delight kindred spirits. But the power to write is only of value as it enables us to embody thought in form in such a manner that others may reap from the forms the conceptions of the mind which created them.

In itself the power is worthless, for no collection of indiscriminately arranged words, I conclude, would be of value; but as thought can be conveyed by this agency, the art cannot be overestimated.

The works of Shakespeare, Macaulay, and Bacon we greatly value, but they neither command our sympathies nor approbation because they are combinations of characters arranged in meritorious order according to rule, but through the excellency of the mind which they make known, for, while reading these works, we recognize the minds of the authors conversing with our minds as fully as if the very men were standing before us in person, and speaking in audible sounds.

It is so with drawing, for this is only a vehicle for thought—a means to an end; and I know not that the art is worth the expenditure of labor necessary to its possession, but for this one power which it has. Writing may be said to be a plain chariot in which thoughts are conveyed from individual to individual throughout a kingdom, and sometimes beyond; and decorative art, an ornamented car in which mind is conveyed throughout the world. One feature of especial interest as appertaining to drawing is this, that the language which it speaks is universal, and addresses itself alike to the inhabitants of every land. Then, however desirable it may be to possess the power of delineating objects for secondary purposes, the great value of such ability rests in the increased means afforded for the conveyance of thought. Seeing that we value the power of drawing merely as a means and not as an end, and recognising the truth already enforced—that the amount of pleasure derivable from an object is in ratio to the amount of mind which it manifests, it will not be difficult for us to determine the merits of the varied classes of decorative art.

Mere imitation is not ornamentation, and is no more art in the higher sense of the term than writing is in itself literature, for in order to the production of ornament there must, at least, be adaptation.

Our so-called natural wall papers will illustrate the first, or most elementary, step taken towards the production of ornament, for adaptation has here been considered so far as is absolutely necessary in order that the design may repeat in the mechanical manner necessary to its production, but no further. Here, the effort has been to imitate what is seen, and not to adapt natural forms to the purposes of decoration; the little adaptation essential is rather mourned over than joyed in, and had it not been indispensable would not have been considered.

If mere imitation is ornamentation, the ornamentist must at once give place to the photographer, for his art repeats natural objects with infinitely more accuracy than the most careful draughtsman; but photography cannot invent ornaments as it is devoid of the mental or imaginative faculty, for the working of the mental power is essential to the production of decoration, and, indeed, to the creation of all exalted art.

We have no reason to believe that when the old Greeks were about to produce one of their inimitable statues, they searched the land for the most perfect human form, and simply imitated what they saw; if so, they would have made a cast of the figure: but their statues are not casts; they are types of the human shape, and unquestionably resulted from a consideration of the form of many individuals. I imagine that prior to the production of one of these statues, an enquiry was made into the perfect form of the human body, which investigation might be long continued, and require the observation of the forms of many; and after the mind had produced to itself, in the form of a mental conception, a perfect type worked out in all its details, an enquiry was further instituted into the modification which the form underwent as the action of the figure was brought to that required. After such preparation the production of a figure perfect in form was comparatively easy; the difficulty rested in formulating correctly the mental image, and in order to this the great knowledge was required. What we admire, then, in the Greek statue is not the manifestation of mechanical skill or labor in its construction (indeed, no thought of labor is intruded upon the mind when beholding it), but the knowledge manifested by it, and we view it with delight as the embodiment in matter of a conception of the mind.

We see that perfect works of art are not imitations of that which actually exists, but are mind embodied in form, and this is emphatically the case with ornament, for that which is most pleasing and meritorious is that which has most fully mental origin, while that which sets forth things seen is of a less satisfactory character.

Natural adaptations, we have seen, are the lowest form of decorative orna-

mentation, but the next step, which is much more exalted, consists in the "conventional treatment" of natural forms.

Vegetable nature, which is alone the type of ornament, treated conventionally, will not be found to be far removed from truth, but will be merely a natural form, or a series of combined forms, neither marred by blights nor disturbed by winds, adapted to the fulfilment of a special purpose, or suited to a particular position, for the most perfect examples of what is usually termed "conventionalised nature" are those which express the intention of nature, if we may thus speak, or are manifestations of natural objects, as undisturbed by surrounding influences and unmarred by casualties.

In attempting the production of the ideal of nature, the utmost care must be used in order to discriminate between truth and deformity; the beauty of a plant cannot be said to be repeated in a drawing, if deformity alone is portrayed; indeed, deformity must be altogether absent from a perfect work, for art has a more exalted mission than that of setting forth what we loathe.

How repugnant to refined feelings it is to behold a marred feature or disfigured limb perpetuated by statuary as a work of art, and although deformity in plants may not be so manifest, and hence not so offensive, as deformity in man, yet its presence detracts from beauty, even if the source of the evil be unperceived.

Conventionalised nature, we say, will be found to consist in the delineation of nature in its purest or typical form; hence it is not imitation, but consists in the embodiment in form of a mental idea of the perfect plant; but this ideal figure is subjected to a process of adaptation.

The intention of the plant in producing the bud of the honeysuckle is that of developing leaves of certain shapes in a given arrangement while they are yet varied in direction; but should a leaf be partially destroyed through blight or some insect preying upon it, it will be necessary to perfect it; and should the leaves on one side of the stem be smaller than those on the other, owing to their receiving an insufficiency of light, they must be enlarged; or, should any part be drawn aside from its proper position, it must again be restored to its place. And in thus deducing from many examples the laws and forms of nature, and producing a truly typical shape, rests the chief secret of the production of the conventional forms of plants.

Still following an ascending series, we find the next grade of decorative art in the embodying in form a mental idea which has been suggested by nature, and yet the ornamental forms are neither a representation of any actually existing form or of any intention of nature.

The illustration already given of the manner in which a mental conception can be embodied in a new form, as that of an opening bud or of a flower, will likewise tend to elucidate our present meaning; and it will be unnecessary that we spend time in showing that a composition may embody an idea derived from a natural object and yet not imitate the object the spirit of which it embodies, for we have before seen that this is possible.

It is apparent that the latter class of ornament is a greater development of mind than either of those which we have already considered, for in the "natural treatment" there is the smallest possible amount of mental power embodied, and although in conventionalised nature there is much more, yet there is considerably less, than in the embodiment of a mere feature in ideal form.

Purely ideal ornament is that which is most exalted, it being wholly a creation of the soul; it is utterly an embodiment of mind in form, or an offspring of the inner man, and its origin and nature give to it its elevated character.

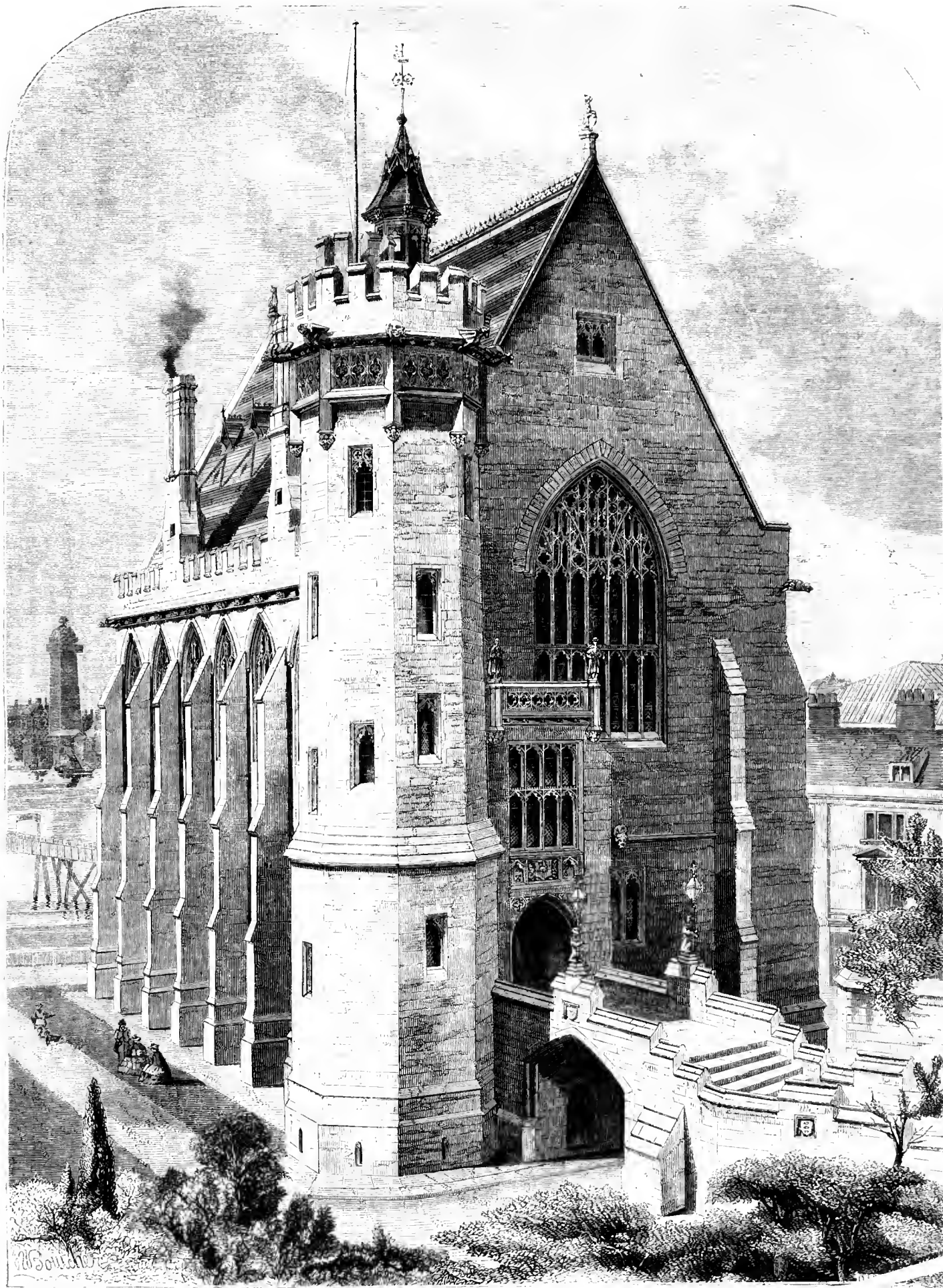
It would be a folly now to enforce the statement that conventional ornament is the highest branch of decorative art, as we have shown that the exaltation of ornament is in ratio to the amount of mind manifested in its creation, and the most careful consideration will verify this truth; for ideal creations are as far above imitations as the mind is above the brute—many brutes can imitate, but they cannot create.

We are now enabled to classify ornaments by affinities resulting from equality in respect to the embodiment of mental power. Thus we have as examples of the first, or most exalted, grade of ornament, the Greek, the Moorish, the Early English, much of the Indian, many features in the Japanese, and some parts of the Egyptian and Renaissance. In the second class, following a descending series, we may instance much of the Egyptian and Chinese, and a few features in the Greek and Japanese. In the third a great portion of the middle-age work, especially the later Gothic, and many parts of the Chinese or Indian; and in the fourth or last class, much of Pompeian and our modern floral patterns.

While we have thus instanced a few examples which seem, on the whole, illustrations of the grades to which we have called attention, yet in several cases the same part of a decoration will by two features illustrate two grades. Our own floral patterns, while they belong to the fourth or lowest class in view of their composition, belong also to the first or second class in view of their coloring, for it is in some parts purely ideal, and in others nearly suggested by natural objects; and, were it not for the more exalted character of the coloring, these patterns would be much coarser than they are.

While there are these grades of ornament, it must also be remembered that there can be good and bad in each class, for if a purely mental creation has not its parts subjected to the laws or requirements of ornament, which we have yet to point out, it cannot be satisfying, and the pain resulting from beholding an imperfect ornament will be in ratio to the class to which it belongs, and will be greater as the class is exalted. Purely ideal art, when degraded, is most offensive, as it is the nobler part of man so debased as to be contemptible.

The lecturer then referred to plants as furnishers of ornament, and pointed out the manner in which a plant grows. Every plant at first consisted of but one body, a cell, and however long that plant might grow, and to whatever extent it might be developed, it was but a multiplication or repetition of what it first appeared. He then referred to length to the horse chestnut, showing how by growth the plant had been repeated and multiplied. A flower was only a very short branch with leaves springing from it, but those leaves were modified in color and character to perform the particular work which they were destined to fulfil. We saw that plants had repetitions, and so it was in fine art, as might be witnessed in the kaleidoscope, where the pleasing effect was produced by repetition according to rule. Repetition was essential to the production of ornament. He then referred to diagrams of the *begonia* and *petunia*, showing how they repeated their parts. After referring to the repetitions in *mignonette*, the lecturer remarked that alternation was essential to the production of ornament, and the object answered by this alternation was calling attention away from the junction



THE NEW MIDDLE TEMPLE LIBRARY.

1. The first part of the paper is devoted to a general discussion of the problem. It is shown that the problem is of great importance in the theory of the differential equations of the second order. The problem is to find the general solution of the differential equation

$$y'' + p(x)y' + q(x)y = r(x)$$

where $p(x)$, $q(x)$ and $r(x)$ are functions of x . The general solution of this equation can be found by the method of variation of parameters. The method consists in assuming a particular solution of the form

$$y = u(x)y_1(x) + v(x)y_2(x)$$

where $y_1(x)$ and $y_2(x)$ are two linearly independent solutions of the homogeneous equation

$$y'' + p(x)y' + q(x)y = 0$$

and $u(x)$ and $v(x)$ are functions to be determined. The method of variation of parameters leads to a system of two linear equations for $u(x)$ and $v(x)$. The solution of this system gives the particular solution of the inhomogeneous equation. The general solution of the inhomogeneous equation is then obtained by adding the particular solution to the general solution of the homogeneous equation.

of lines. Passing over symmetry, Dr. Dresser proceeded to the consideration of adaptation. There was a perfect adaptation of the flora to the earth on which it rested. Adaptation in nature might be shown in almost every flower. In the case of decoration it was all-important to consider adaptation as a primary feature. On this point he referred to the forms of the Egyptian and Greek water vessels. It was a peculiar prerogative of art to take hold of a pleasing feature and to possess it; we had to decorate and beautify, but we had to take hold of a pleasing feature and to beautify that. The lecturer passed on to speak of the power of ornament to express ideas with the aid of symbolism, and to argue of the possibility of embodying thought in abstract ornament, in conventional forms, which he illustrated at some length. All the ornamentist had to do was to make the mind create a certain thing.

The lecturer on resuming his seat was warmly applauded by the meeting.

The CHAIRMAN (Mr. F. Y. Hurlstone) moved a vote of thanks to Dr. Dresser for his excellent and elaborate lectures, in which he had entered into details of great interest in regard to decorative art. The motion was seconded and carried by acclamation.

The meeting then broke up.

THE GEOLOGY OF THE ISLE OF PORTLAND.*

WE are glad to see that Mr. William Gray has had reprinted his interesting paper on "The Geology of the Isle of Portland;" a considerable portion of the information given is of great value. It is shown that—

The series of strata, though not everywhere exhibited together, yet when grouped as a whole afford a vertical section of about 525 feet; hard rocks of a light color giving about 145 feet; dark brown sandy deposits about 45; and the Kimmeridge clay formation the remaining 335. The slides, which to the east and west present bold fronts to the sea, have been much effected by landslips.

The sections of the various strata are shown in a woodcut, beginning at the top they are—

Belonging to the Purbeck series.	Sand and gravel of the Raised Beach.
	Calcareous slate, 8 to 30 feet thick.
Portland Stone.	Clay band.
	Bacon tier, 1 to 1½ feet.
	Clay band, 8 feet.
	Aish, 3 feet.
	Soft burr, 1 foot to 14 inches.
	Dirt bed, 1 foot to 16 inches.
	Top rising, 2 feet.
	Cap, 4 to 7 feet.
	Seam of black earth.
	Skull cap, 20 inches to 3 feet.
	Roach, 3 feet.
	Whit-bed, 9 feet. (The really best bed of stone.)
	Curf and waste, with chert beds, 6 feet.
	Roach, 1½ to 2 feet.
	Base bed or lower tier, 5 feet. (Called also the "Best bed.")
	Limestone and chert, 75 feet.
	Blue clay 2 to 10 feet.
	Portland sand, 45 feet.
	Kimmeridge clay, with septaria, 335 feet seen.

The Portland sand, next above the Kimmeridge clay, and into which it gradually merges, is made up of layers of an olive-green-colored limestone, divided horizontally by sandy beds, the mass being shattered and broken. So unshapely are the blocks of which the layers are composed, that if it could be conveniently quarried, it would be unsuitable for building purposes. Some of the beds are soon destroyed by exposure to the weather; but others are comparatively unaffected, and the exposed surface becomes covered with lichens, as may be seen on several of the overturned blocks on the north-west slope. The thickness of the Portland sand is about 45 feet.

Occupying an intermediate space between the Portland stone proper and the Kimmeridge clay, the Portland sand may be considered the transition series, but notwithstanding this graduated development of the solid Portland beds, it is not easy to comprehend how it comes to pass that they overlie a formation very little altered at present from what we should suppose the Portland stone beds were when first deposited. What consolidated the Portland beds? If pressure produced the effect, why should the clay below remain unchanged? In the Portland sand, like in the overlying strata, are found fossil casts of ammonites, trigonites, &c.; it might have happened that the shells decomposed as they lay in the original silt or sand, and that the carbonate of lime thus supplied was taken up by water, and distributed throughout the strata, and again crystallising, consolidated the mass interposed between the beds of clay, the latter, by its impervious character, preventing the filtration of the water.

At the Vern Ditch (in connexion with Portland defences) a most favorable opportunity is afforded for examination and study. This cutting, when finished, will, in the aggregate, make up a length of 1,100 yards, by in width 100 feet, and in depth from 30 feet to 75 feet. From this, the enormous quantity of 1,073,000 tons must be removed. The excavated material is used in constructing the breakwater now in progress, under the Admiralty, in Portland Roads.

The first thing that strikes the visitor in this excavation is the extraordinary regularity of the strata; a narrow bed of stone between layers of chert can be traced for a long distance, and many of the beds as developed here can be recognised again on the cliffs on the eastern and western sides of the island; some beds are subdivided, and again united within a short distance; one bed in particular, showing a thickness of 14 feet at the eastern entrance to the ditch, is subdivided within a short distance on that face into several beds.

The general thickness of the beds of stone is from 2 to 5 feet, and the cherty beds vary from 6 inches to 3 feet. Sometimes the chert runs from one layer into another, and very often the veins in the bed of stone between two layers of chert are filled up with chert also, so that it looks on some sections like vertical, or almost vertical, markings made with a tar-brush. The horizontal beds of chert, where a fresh section is opened, appear almost black, and contrast strongly with the light color of the intermediate beds of stone. This difference of color is soon mellowed down by the growth of lichens and other vegetation. Some of the cherty layers are made up of shells, and in the upper beds of this series cherty nodules are not uncommon, which, when broken, show a shell in the centre. These nodules vary from the size of an egg to the size of a heavy cannon-shot. In the lowest beds the chert is in irregular patches, as if collected round a branched nucleus, and a section shows a number of parallel lines from the centre to the surface of the mass, disposed in concentric rings.

The beds, so remarkably regular, and almost horizontal in the cross section, suddenly dip at a considerable angle (30 degrees) on the east and west faces. This seems to have been caused by slips parting in the direction of fissures, and becoming thus tilted over in the direction of the slopes already described. The ditch in one direction, on the west face, is cut through a slip of this kind; and on the east face the tilted nature of the strata causes a difficulty in forming the contemplated perpendicular escarpment. This phenomenon, manifested also in other portions of the island, was evidently caused by the wearing away of the underlying clay and sand, the destructive effect of which was promoted by the existence of the fissures.

On the Vern Hill—which is a comparatively level space of about 50 acres, at the northern end of the island, bounded by the slopes described at the beginning of the paper—

The Base-bed has been quarried to a limited extent; but, as might be expected from its geological position, the quantity was scanty and of inferior quality; for in Portland the beds, whether they merely crop out by running with a quicker dip than the fall of the surface, or run parallel with the surface, in either case, are very much broken and shattered for about 8 or 12 feet from the surface. The Base-bed, in this shattered condition, extends over the greater part of the Vern Hill. It runs out to the south as it approaches the ditch, and from about 200 feet at the other side of the ditch, where it again crops out, it continues all over the island.

The local term "Best-bed," as applied to the stratum now under consideration—

Has caused no little confusion and disappointment; for, though it possesses the finest texture and the most uniform color of any bed on the island, it is not really the best for many of the purposes to which it is at present applied; it is liable to rapid decay when exposed to the weather; but, being soft, it is easily and economically sawn into any size, and therefore meets with demand in the market. There can be no objection to its use for inside work, where it answers admirably, and the wonder is, that it is not oftener so employed; but, for outside work it is ruinous. The misapplication of the term "Best-bed," and the injudicious employment of it for works exposed to atmospheric influences, had created a considerable prejudice against it, and many thousand tons that should have been quarried in Portland are left behind, and covered up in the debris quarried from the other beds. The term "Best-bed" may be a corruption of the term Base-bed, the latter being most correct when applied to what is commonly called the Best-bed, for it is the base, or lowest bed quarried in the Isle of Portland. It is very uniform in its texture and color, free from fossils, and may be had in any reasonable sized blocks, not more than 5 feet in one direction, this being the average thickness of the bed.

Overlying the Base-bed, and closely associated with it, there is a bed of "roach," from 18 inches to 2 feet thick.

Between the roach of the base-bed, and the Whit-bed, or really Best bed, there intervenes a bed, or beds, called by the quarrymen "curf," and "waste;" this is divided from the underlying, as well as from the overlying beds, by layers of chert, and is often subdivided by similar layers; the quality of the stone, too, varies considerably, and is never fit for particular work.

Next above the curf is the Whit-bed, or the true Best-bed of Portland stone.

The local term Whit-bed is a misnomer, and like the term Best-bed, as applied to the lowest bed, leads to confusion; for Whit-bed, in contradistinction to Best-bed, implies that the former is whiter and second in quality to the latter, whereas, in reality, the Whit-bed is the darkest and best, and (what is called) the Best-bed is the lightest and worst.

Architects should carefully note those distinctions. The texture of the Base-bed differs from that of the Whit-bed, in that the former is comparatively free from fossils, whereas the latter contains a great quantity of comminuted shells, the fragments being just small enough to impart a light brown tint to the stone, without giving it a speckled appearance.

The durability of this stone, as compared with the Base-bed, may be occasioned by the quantity of crystallised carbonate of lime by which it is impregnated, derived from the contained shells. The centre of the Whit-bed proves the best for exposure to weather, inasmuch as the top, and more particularly the bottom, of the bed is much softer. A knowledge of this fact is necessary to the proper disposal of this stone in architectural works, and to counteract the injurious effect of the workmen's practice in dressing the top or bottom of the bed for the fine or exposed surface. The Whit-bed is generally about 9 feet high, and is necessarily split up into smaller blocks before it leaves the quarry. When a block, the full height of the bed, is parted in the centre, two stones are produced, each of which has a hard and soft face, the hardest being that part nearest the parting joint, and the softer, the parts next the top and bottom of the bed respectively.

When a mason is given one of these stones to work, he selects the softest part for the face, taking the least amount of labor to produce the more particular surface required; the result must, therefore, be to the disadvantage of the stone. Whereas, had the centre portion of the original block been selected for the face-work, the result would be more durability, as well as uniformity of color. The foregoing observations apply more particularly when the stone is laid square with the direction of its bed, and not "on its natural or quarry bed," as is generally specified, and, indeed, most necessarily so, when the stone is of a laminated or fissile structure; but with Portland stone, for the reasons stated, it is questionable whether any advantage would be derived from insisting on laying the blocks on the quarry-bed; it would require constant, untiring supervision to secure the fulfilment of such a condition, and very few, except the practical workman, can detect in some blocks of Portland stone which way the bed runs, unless by the difference in quality between the centre of the layer and its top and bottom; and when this difference is apparent, it would be, indeed, unwise to enforce the above rule, viz., "that every stone should be laid on its natural or quarry-bed."

The quality of the Whit-bed—like all the other beds in Portland—varies considerably; for example, in one part of the Admiralty quarries it is exceedingly rough and frothy, containing numerous shells and white spots of a calcareous substance; the latter crystallised in concentric rings; whereas, in the same quarry, nay, even at the other side of a joint or parting, the stone assumes its usual fine and uniform texture. It would be needless attempting to account for this phenomenon, but such is the fact.

Generally speaking, the beds produce the best quality of stone northwards. At the north-west, both Whit-bed and Base-bed are of excellent quality; farther south, the Whit-bed reaches its highest degree of perfection, but the Base-bed falls in quality; at the south-west both are inferior. On the east side of the island the Base-bed is very good, and the Whit-bed is coarse and shelly; both beds are again deteriorated in quality southwards. The same difference in quality may be noticed in the curf and roach. The former may sometimes be found almost equal to the latter, but, as a rule, the distinction between curf and roach should always be observed, and the former never put where roach is intended, particularly in exposed situations, as sea-walls or docks.

Overlying and closely associated with the Whit-bed is the celebrated Roach, a local term applied to a layer of about 3 feet thick, made up almost entirely by casts of various shells, such as a *Cerithium Portlandicum*, *Trigonia incurva*, *Trigonia gibbosa*, *Neritoma sinuosa*, *Pleurogonaria rugata*, *Lucina Portlandica*, &c. This is the only bed in which "the screw," or *Cerithium Portlandicum*, is found, and here it is in the greatest abundance; not a fragment of Roach can be picked up without some portion of this shell; so thickly are these casts crowded together, that they frequently run one into the other; it is not uncommon to get a *Cerithium* in the cast of a *Trigonia*, or the cast of a small *Cerithium* in another. All the fossils of the roach, except the *Ostrea expansa*, are merely casts, not a vestige of the original shell is left, nor is the space it once occupied filled up by any calcareous matter; a clear space is left round the cast; it is this circumstance that gives the stone its spongy or aërated appearance.

For durability the Roach cannot be surpassed, yet, notwithstanding this latter quality, it has not heretofore met with much favor in the market; hence thousands of tons quarried and squared up, have for many years been left lying about in all directions in the quarry-heaps, and hundreds of tons more have been covered up in the quarry debris or "tipped" over the western cliffs; latterly, however, it has received more attention, and it is now beginning to be extensively employed on large works of all kinds where its roughness is not an objection; for docks, sea-walls, heavy abutments, or bridges, it answers admirably.

In selecting even this bed for building purposes, care must be taken that no portion of the Curf-bed, or even the Roach of the Base-bed is substituted; for, unlike the Roach proper, neither of the latter will stand the weather, nor are they by any means as strong

* "On the Geology of the Isle of Portland," by WILLIAM GRAY, Esq., Royal Engineer Department.

as the best Roach. Though very much alike in appearance, the good Roach is easily distinguished from the others by its darker color; it is more siliceous, and the cast of the *Cerithium Portlandicum* is peculiar to it.

The Roach-bed is, on an average, about 3 feet thick, and blocks of almost any lateral dimensions can be procured from the quarries; blocks are sometimes raised containing so many as twenty tons. The bed is made up of three layers; the lowest is rather compact and close-grained, resembling the underlying Whit-bed. In the west quarries this lowest division of the Roach contains the peculiar white, cylindrical crystallisations noticed in the rough Whit-bed of the Admiralty quarries. The centre division is that which gives the Roach its peculiarity, being made up (as described above) of numberless casts of shells; the upper and smallest division of the Roach is rather laminated, and resembles, in a faint degree, the calcareous state of the overlying beds; these three divisions are not easily divided, they are all closely combined in one mass. It is remarkable that the Roach-stone will not cleave readily in the direction of a plane parallel with the bed, or line of deposition. The quarrymen invariably cleave it in a direction square with the bed, and the fracture thus produced is uniform and regular, whereas, if the stone were split *with* the bed, the fracture would be irregular and wasteful.

The Roach is the most recent formation of the Portland series; immediately above it comes the first bed of the Purbeck; but between those beds, and more particularly attached to the Roach, there are irregular patches of flints, full of shells; in the upper surface of the flints the shells are especially well preserved. The variety of shells here discovered is very great, from the large oyster and pecten to the smallest cyrena, but it is difficult to detach perfect specimens, owing to the refractory character of the flint; polished specimens, and pebbles from the beach composed of it, give very good sections of the shells which it contains.

The next bed above the Roach is the "Skull-cap," so called from its position with regard to the Roach; though thus closely associated, they are essentially different, the Roach being of marine origin and belonging to the Portland series, and the cap of freshwater origin and belonging to the Purbeck series. The skull-cap, which is one division of the overlying cap, is, like the latter, most irregular, and, as to shape and texture, has no constant thickness; for example, the skull-cap, in one part of a quarry may be only 20 inches, and within a short space it may swell out to a thickness of 3 feet or more; the overlying cap, taken together with the skull-cap makes up a deposit having a total thickness of from 9 to 12 feet; the irregularities of the upper surface of the skull-cap corresponding with the uneven bed of the cap, the ridges of the one fitting into the hollows of the other; but they are divided by a layer of black earth, resembling the Dirt-bed, and which occasionally, like the latter, contains cyceads. In the cap there are circular perforations of about 4 inches in diameter; they resemble very much the holes drilled for blasting, were it not that the stone for about 10 inches all round the hole, differs materially in its texture from the main block, being vesicular and porous, and seems as if some crystallisation had taken place around some substance once occupying the now vacant space; this appearance is the more remarkable in the cap otherwise compact and close-grained, not even presenting the oolitic structure. The upper portion of the cap is more laminated than the lower, and about 2 feet of it is easily separated from the top; this thickness is called the "top-riding."

Immediately above it there is a bed about 12 or 14 inches thick, called the "soft burr." It is used in the island for building dwelling-houses, which its soft porous nature causes to be exceedingly damp.

It is from this that the sand used for building purposes on the island is obtained, thousands of tons being used on the extensive works in progress on the Vern Hill. There are no remains of shells, or other organic body, found in those sand and gravel pits, but on the east side, and north of both lighthouses, to the edge of the cliff, there is another deposit of a finer description, which is full of shells and roots of plants; one layer, of about 7 inches thick, is composed entirely of shells in a perfect condition, and where they are exposed in section they are conglomerated together like the pebbles of the pudding-stone. Thousands of these shells can be gathered in a few minutes. The deposit is about 40 feet above the level of the sea.

Geologists and architects are alike indebted to Mr. Gray for his researches.

DWELLINGS OF THE OPERATIVE CLASSES IN EDINBURGH.

AT the annual general meeting of the Architectural Institute of Scotland, Mr. J. D. Peddie in the chair, Mr. David Cousin read a paper on "The Present State of the Dwellings of the Operative Classes of Edinburgh," a topic suggested by the late calamity in that city.

It appeared that nearly one-half of the whole number of houses in the entire city are of the poorest description, and are rented at sums not exceeding £6 per annum. The total number of dwelling-houses may be stated in round numbers at 32,000; of this number there are 20,335 at and under £10 of rent, 15,163 at and under £6 of rent, and 12,747 at and under £5, and 9,076 below £4 of rent. We have thus the enormous number of 15,163 houses at and under £6 of rent—a large proportion of which are huddled together in the old "lands" of the High-street and Canongate, and adjacent wynds and closes, many of these towering to the enormous height of seven and eight stories above the street. These tenements, or "lands," were originally built as the town residences of the gentry of their day. Each flat, consisting in many cases of eight or nine rooms on a floor, was occupied by a single family; in many cases the upper floor and attics were occupied as one house; sometimes two floors were occupied by one family, having an interior staircase. Those houses are now diverted from their original use and converted into houses for the working classes, and in many cases of a still poorer class of tenants—each separate room forming a separate house for a whole family. In many cases you have 16 or 18 families all entering their several dwellings by one narrow turnpike stair, dark and dilapidated, the steps worn, and not more than 3½ feet wide. The rents for such apartments vary from 1s. per week to 1s. 9d. or 2s., according to the size of the apartment. In one land which I visited lately, I found 56 different families all entering their separate dwellings by one common stair. From a statement supplied to me I find that in 1858 a survey had been made of this land, when it was found that there were 59 families in 79 rooms, and 224 inmates, of whom 54 were men, 78 were women, and 112 were children. This vast tenement is six stories in height, besides the attics, and to none of all these 59 families had water been supplied, nor soil-pipe nor water-closet, nor other necessary conveniences of any description. All water for domestic purposes had to be carried from the public well in the street up to the highest house, and all soil had to be carried down to the water channel in the street. Only think of 59 families in one stair! and that stair situated at the foot of a cul de sac 5 feet wide, surrounded by tenements 45 or 50 feet high! Think of the population of a whole village crowded into a single staircase—their houses destitute of the means of personal cleanliness or sanitary arrangements. It is bad enough for the adults; but what shall we say for the 112 poor children, many of whom I found sitting in little groups on the steps of the dark chilly unwholesome staircase or congregated at the mouth of the close on the public thoroughfare, subject to the contaminating influences of the foul air arising from the water channels where the night soil is thrown out to be removed by the scavenger in his weary rounds of his barrow, in unceasing efforts to keep up surface cleanings. Such scenes as these are but specimens of what is everywhere

to be witnessed, and it is such scenes that have given our old town such unenviable notoriety.

Referring, then, to the physical and moral effects of living in such dwellings on young and old of both sexes, the speaker proceeded to consider where to find a remedy, the first object being to secure the erection of additional dwellings, so that the overcrowded portions of the city might be opened out.

The best method of securing success would be for the working men themselves to take this all-important matter into their own hands. Could they only be persuaded to take up the question of providing house accommodation for their families, it would be one of the greatest means of social advancement that has yet been attempted. They know their own requirements better than any other class of men, and he idea of workmen associating together for this object is not new. In the year 1826 a co-operative society was formed in our own city, consisting of forty-eight members, joined together for the purpose of providing houses for themselves. This object they accomplished in the course of seven years, during which period six separate tenements were erected, with eight houses in each, being one house for each member. This property is situated in Canning-place, Causewayside, and is to this day a fair specimen of what workmen's houses ought to be. The plans were prepared by one of themselves, another took charge of the weekly subscriptions, and the whole affair was managed without expense. The committee of management contracted for the erection of the building in the ordinary way by competing estimates. The entry-money, I understand, was £5, which gave a small capital to begin operations. The weekly contributions of 2s. from each member helped the stock, and after the buildings were advanced to a certain stage money at the ordinary rate of interest was easily procured. Each house consists of a room, kitchen, light bed-closet, and two dark closets, with water supply, soil-pipe, sink, and water-closet. The cost of such houses at that time was only about £80. Wages were low and building materials cheap. The association I refer to, as has already been said, commenced in 1826. The wages in that year for joiners were 18s. per week; in the following year they were 14s. Yet with such low wages forty-eight industrious self-denying men were found with firmness of purpose sufficient to enable them to conduct this scheme to a successful issue. House rents, I understand, were rather cheaper during the period I have referred to than now; clothing was quite as dear then as now; some articles of food were much higher, as tea, for example, which at that time was 6s. per lb. The wages of the joiner now averages 22s. per week; that of masons, at the present time, is 5½d. per hour—which, for sixty hours per week, the length of time during which they worked at that time, gives a wage of 27s. 6d. per week, or, at fifty-two hours per week, as now arranged, a wage of 23s. 10d. per week, or fully one-half more than their brethren of thirty years ago. If industrious working men in those days could spare 2s. of weekly contribution towards the erection of dwellings for their families, surely it would be no great stretch of self-denial in their successors, now so much better paid, to follow their example and contribute a like sum for this noble object. The intelligence of the operative classes now is quite equal to what it was then, and they are much better accustomed to co-operation in securing a common object. Amongst their number there are men enough of skill, energy, and force of character sufficient to conduct such operations to a successful termination. It had occurred to me that those Property Investment Associations, set afoot some twelve or fifteen years ago, must have been the means, as it was the avowed object, of enabling working men to secure houses for themselves to a great extent. This I fear has not been the case. On inquiry at the manager of one of the largest of those companies established thirteen years ago, I find that it has advanced during that period to its members for the purchase of property no less a sum than £236,000. Of this large sum not more than £5,000 has been advanced to journeymen tradesmen, or clerks with corresponding wages, for the purchase of houses for their own occupancy in Edinburgh. Small tradesmen and journeymen have availed themselves of the facilities which these companies afford of getting money, and have purchased house property of an inferior description on speculation, for the purpose of being let or sold over again at an advanced rate. The prices paid for such properties in closes and back-courts range from six to eight years' purchase. In most cases such properties have been purchased by persons who seek to derive as large a return as possible without much view to sanitary arrangements—a few laudable cases form the exception. It thus appears that investment companies have not altogether realised the object originally contemplated—namely, of enabling working-men to become proprietors of their own dwelling-houses; nor have they in any sensible degree been the means of improving the houses of the working-classes. A co-operative building company has lately been formed, with a nominal capital of £10,000, in shares of £1 each. I believe there are already upwards of 200 members. Such a company, if once firmly established on a broad basis, might do much to meet the demand for workmen's houses; but to be available to any considerable extent, they would require a large capital for investment. Such a company, for some time at least, cannot be expected to have capital ready to invest in fixed property. Their object at first must be to build and sell rather than to hold heritable property for the purpose of being let to workmen. Associations of the nature I have formerly referred to, as exemplified in that of 1826, might work harmoniously along with the co-operative building society—the one advancing the money to build, the other entering into contract. Benefit societies, where capital has been accumulated, might also lend their money in aid of the erection of workmen's houses, where a secure investment is offered. There are many ways in which workmen may combine to secure this desirable object. The first great desideratum, however, is to secure the erection of additional houses by any means; by all means get houses, they are required, they must be provided. The next step is to look into the existing house accommodation occupied by the lower-rented tenants, paying from 1s. to 1s. 9d. per week for rooms such as I have already described. So long as these hovels are allowed to remain they will be filled by tenants of one sort or another. In the energetic language of a distinguished citizen, "So long as you have places only fit for pigs, you will get pigs to occupy them." Self-preservation calls on us to remedy this growing evil. How is this to be done? that's the question. Let those old houses of "excessive, incommodious, and dangerous" height be deprived of two or even three of the upper stories. Open up new lines of streets midway between the High-street and the Cowgate on the one hand, and the Old Physic-gardens and north back of Canongate on the other, parallel to the High-street, or winding in such directions as the special necessities of the case may require, and having large openings into the leading streets wherever practicable. Or let closes be opened up by throwing down each alternate row of old houses. What is wanted is free open space.

"GIVE AND TAKE" COMMISSIONS.

SO many of our readers, both professional and unprofessional, have addressed us with reference to a recent lawsuit that we feel no longer at liberty to maintain the reserve we had hitherto observed. Our silence has been variously interpreted, in some cases rather unfairly; for we neither felt inclined to shirk duties incumbent on us, still less to volunteer a defence of professional practice without regard to the merits of the suit in question or to the interests of the public involved in it. It is quite true that an organ of the profession owes a duty to it, but a duty more imperative and important is due to the public. Nor is the duty a divided one, for the interests of the public and of the profession are identical. They cannot be separated without injury to both, and the one cannot be slighted without detriment to the other. It is all the more necessary and apropos to insist upon this point just now, when the profession is engaged in the arduous task of self-reform and purification—when it is occupied with the preparation of a system of professional education, to give the public the best possible guarantee that architects shall be thoroughly instructed in the theory and practice of their art for the efficient discharge of their duties, and when an ungenerous advantage is sought to be taken in certain quarters of the confusion which naturally accompanies reform to exclude regularly educated architects from employment on architectural works.

The report in a recent number of the BUILDING NEWS of proceedings at a meeting of the Society of Arts will show how justifiable were the warnings we have given the profession for some years past. When professional enthusiasts have ridiculed the well-meant interest displayed by amateurs, have insisted that non-professional persons were incapable of appreciating the merits of architectural design, and have protested against the interference of clients and the public, we warned them that they were using a two-edged weapon that might be turned against themselves at any time. No longer ago than the 15th of November we wrote that it would be "impolitic to augment the irritation of the public against the profession, for there already existed a tendency or predisposition to avoid employing architects in several quarters, but more especially in Government regions;" and further on, that if architects sought to exclude the public on the grounds of being incapable of knowing anything about architecture, the public might turn round and say, "If we are not to be allowed to select what pleases us, we will not spend our money upon what we cannot understand, and are not to be allowed a voice in. Rather than be controlled by an architect, we will dispense with his services, save his commission, and construct ourselves substantial edifices, having no pretensions may be to design, but built for less money, and to suit us."

Again, on the 6th of December, we repeated the warning that "there is a marked and growing tendency on the part of persons who spend money in building operations to avoid employing architects." Well founded as we knew these statements to be, and urgently called for as we felt the warnings to be which we have so repeatedly given, we readily admit that we did not anticipate so early and complete a confirmation as they have met. When Mr. Cole told the amazed listeners at the Society of Arts that, "Profiting by their experience of the most eminent architects and engineers the Commissioners determined on this occasion (constructing the International Exhibition Building) to have nothing to do with them," he admitted everything we had previously stated, and he gave so clear an intimation of the intentions of the chief employers of architects, that the profession would do well to take heed in time, and set its house in order before they are involved in the coming struggle. How far this deplorable repulsion to the employment of architects is due to architects themselves we do not purpose to inquire now. The absurd pretensions to exclude the public on the grounds that no one but architects can understand architecture have doubtless largely contributed to this irrational and unjust prejudice. We do not attempt to conceal or excuse the *laches* of the profession, it would be great unkindness and gross neglect of duty to do so. The profession, from culpable indifference or some less creditable cause, has suffered the most lucrative branches of practice to pass away from it entirely. Architects do not build our bridges, or viaducts, or railway stations, or docks, or dock warehouses, or lighthouses, not to mention numerous other works of construction, all of which have been allowed to lapse to the domain of civil engineers. Churches, street structures, park lodges, and almshouses, are for the present left to architects. But such architectural monuments as bridges they have abandoned, and if the same policy be persisted in, we may expect to see shortly architects the only professional men acquainted with the practice of construction that will be excluded from the practice of architecture.

The case to which attention has been directed is illustrative of the inclination which public feeling is taking, and of the evils which beset the profession. An architectural firm at Whitehall—Messrs. Nelson and Innes—were requested, in conjunction with other architects, to send in designs for a school-house and premises proposed to be erected at Hilston. They did so, and added estimates by which it appeared that their design could be carried out for £1,543. The Committee for managing the school approved Messrs. Nelson and Innes' design, but suggested alterations, which were made. Tenders were next called for the execution of the works, and the lowest sent in was upwards of £2,000, being considerably beyond the estimates, and beyond the means at the disposal of the Committee. The consequence was the project was abandoned, and the architects brought an action against the Committee to recover 5 per cent. commission on the cost, on the grounds that they had prepared the plans and drawings upon the understanding that they were to be employed to superintend the erection of the structure. The Committee denied their liability, on the plea that the architects had induced the belief that the plan, as altered,

could be carried out for the original estimate, which the tenders sent in proved could not be, and, in fact, that the estimates would be exceeded by several hundreds of pounds. The architects replied that the alterations were so substantial, and, in addition, that the Committee must have known, even if they had not been informed, that their cost would increase the estimate. This the Committee denied, and asserted that the architects had informed them that the alterations would amount to a "give and take," and could be executed for the sum stated in the original estimate. Upon this point conflicting evidence was adduced; the trial lasted two days, after which the jury had to be discharged from being unable to agree in a verdict—a most unsatisfactory conclusion, perhaps, more mischievous than a verdict for the Committee.

Looking calmly and impartially at the general features of the case, it is impossible not to see that there have been faults on both sides, or that committee and architects have been victims of the vicious system by which architectural commissions are canvassed for and awarded. First, we have the substantial and glaring injustice that architects have been employed, without remuneration, to prepare designs and estimates; that they have spent their time and money in doing so, and in dancing attendance upon committees, embodying suggestions for alterations where practicable, and reasoning them out of absurdities. Nothing that can be said; no pleas *ad misericordiam* about the work being a charitable one, can get over this scandalous injustice. "The laborer is worthy of his hire," the chief member of the committee occasionally tells his congregation we presume. If he believes in the text, from which he may, perhaps, have preached, surely he ought to have put it into practice. There is no question that the architects did do a certain amount of work, for which they are entitled to be paid. But the system of public competitions, the professional touting for commissions, have compelled architects struggling for practice to work for nothing, and to charge for plans, estimates, and designs on the commission for superintendence. Here is the root of the evil. We know no other profession or trade in which men tout for employment, and give their services gratuitously, or at best at so unsystematic a scale of charges. So long as the system is allowed to remain so long will a large amount of professional labor remain unremunerated, and the more will ill-feeling be manifested between the public and the profession.

One of the evils of this system is that it puts the architects, who had the right to remuneration on their side, into a false position, and charges to them several errors. As architects and professional advisers to the Committee, they should have given distinct information as to the amount by which the original estimates would be increased to carry out the alterations suggested. It was not for them to assume that the Committee must know there would be an increase. It was the architects' business to cause it to be known.

Into the conflicting evidence we shall not go, although some light might, perhaps, be shed on it if it were stated whether the architects claimed commission on the original or on the increased estimates. In the first case, they would have put themselves out of court and confirmed the case of the Committee; in the second there would be a presumption in their favor. It is sufficient that payment was refused for labor admitted to have been done, and that a jury exhibited an inclination to deny to architectural laborers the hire which they withhold from no other professional men or, indeed, artisans.

THE ROYAL HOSPITAL FOR INCURABLES

THE Hospital Committee has recently purchased some 20 acres of freehold ground at Coulsden, on the same Surrey hill which bears the Asylum for Fatherless Children. They propose to build there a fitting hospital for their patients, and in order to obtain a good design, they invited a short time since eight architects to a limited competition. The several designs six in number, (two architects having failed to comply with the invitation), have been for two days last week on view at the offices in the Poultry. After a careful inspection of them, we cannot but approve in every way of the Committee's selection. The losing men are fairly beaten; and the Committee have shown an amount of taste and judgment in their choice rarely evinced in competition cases.

All the designs, barring one, which is really a melancholy instance of misdirected industry, by apparently an ambitious clerk of works—show more than average ability. Either of the five designs would have been worthy of execution, and with such drawings and such rivals it is an honor even to be a non-successful man. The leading idea in all the plans is the disposal of the male and female patients in opposite wings of the building, with the board-rooms, offices, and principal entrance in the centre. The manner in which this idea is worked out constitutes their relative superiority. Mr. E. M. Barry's plan "Blessed are the Merciful," meets the difficulty of the sloping ground and overcomes it skilfully. The centre is thrown back, and an extra floor is obtained to the wings on the lower portion of the ground. In the middle of the wing-blocks covered recreation grounds are provided, with arcades which form the corridors to the rooms, grouped round them. On one side of each of these covered courts there is an inclined way to the several floors, by means of which the patients may be easily moved up or down. In the centre of the entire block, the entrance-hall, kitchen, offices, servants' hall, and other offices are placed. Over them, on the first-floor, is the board-room, secretary's-room, &c. The sitting-rooms of the patients are in the most promising portions of the wings. On the basement, which is entirely above the ground, there are store-rooms, cellars, and a set of apartments designed for Turkish baths. The convalescent-room is over the board-room on the upper floor, and the servant's bed-rooms are in the attics by the side of it.

The front basement wall supports a continuous terrace, which is a very fine feature in the elevation. Each wing has minor wings with semi-octagonal turrets, between which the terrace runs. In the front of the terraces there are semicircular headed windows to light the basement. Coupled semicircular headed windows, enclosed by a similar arch, but with pointed archivolts, light the principal floor. The same arrangement, omitting the outer arch, is repeated on the floor immediately above it. The roof is high-pitched with gabled attics in it. The central feature over principal entrance is a massive square tower with chimney-stacks forming pinnacles at the angles. The whole is a well-studied and very artistic composition, beautifully proportioned, and showing a thorough mastery of the style adopted. The design of the covered courts is equally effective. Single arches form the corridor on the lower floor; they are subdivided into two pointed arches, with a colored shaft and balustrade between them, on the floor above. The roof of the courts is entirely of glass. The design is very compactly planned and we should regret, if pecuniary circumstances prevented its being carried out in its entirety.

The design of "A. B. C.," by Mr. Coe, to which the second premium was awarded, is only inferior to that which we have just briefly described. It consists of three parallel lines of building, connected by lines of building in front and rear, and by a corridor in the centre, thus forming two enclosed gardens and two courts. It is an Italian design with a high tower in the centre. The uneven ground is made up to a level, and shows consequently external terraces, but this way of getting over the difficulty strikes us as being more expensive and less capable of picturesque arrangement than that adopted by Mr. Barry.

"Consolation" is on plan of the form of the letter **H**, with the entrance in the centre. The high towers and spire roofs are artistically grouped, and it is well drawn, although sadly out of perspective.

The design marked "In good Faith," is the only pure English Gothic design out of the six submitted. Like that of "A. B. C.," it is designed for level ground. There are three lines of building running from front to back, connected in front, and by a recreation corridor in the rear. The larger apartments project from the main line of the several façades, and are faced with gables, which vary the outline, but somewhat destroy the breadth of the design. All the roofs are high pitched, and the windows pointed. A central tower has a saddle-shaped roof on it, with a pinnacle in the centre of the ridge. The design is a very quiet unassuming one; it gives all the required accommodation, and would moreover prove perhaps the cheapest of all in execution.

We hope the author of the drawings marked with a circle will appreciate our kindness in simply acknowledging the labor he has bestowed upon a design which is really not worth a tithe of the application given to it. There is likewise a vast waste of time visible in the design placed by itself, without motto or device, in the lower room. It is not that the design is defective; on the contrary, it is full of merit, but we cannot see the advisability of attempting to overawe the Committee by the magnitude of the perspective view. Here we have a drawing, capably executed, we admit, some 12 or 15 feet long, and proportionately high, and yet the first prize is gained by Mr. Barry without a perspective view of any kind. A smaller view would have shown all its points without making so large a demand upon the limited space for exhibition. If in an unlimited competition architects were to work on this extensive scale, there would be an end of the public exhibition of the designs, because Committees could not find sufficient wall space for them. The design is one, nevertheless, of great merit. It is Italian in style, and is grouped very picturesquely together. One wing of the main building is thrust forward, and the other backwards, so as to conquer the difficulty of the sloping ground, and, at the same time, to obtain thoroughfare ventilation. The principal apartments project from the main lines of the front, and the spaces between them are occupied by colonnades. This allows a cheerful play of light and shade upon the building. The Board-room, secretary's offices, &c., are put together, forming a kind of outwork to the building with which they are connected by an underground gallery.

Mr. Barry's design will, we hear, be carried out, and we shall be glad to have this rumour confirmed, because we feel that the noble charity will therein be fitly housed.

THE SANITARY CONDITION OF WINDSOR.

THE Mayor of Windsor, Wm. B. Holderness, Esq., has directed Mr. C. S. Voules, Clerk of the Local Board of Health, to publish the following:—

The attention of the local authorities has been called to the reports in the *Times* and other papers with reference to the present sanitary state of the drainage of Windsor. I am directed by the Mayor, in his official capacity of Chairman to the Local Board of Health, as well as from his own personal knowledge as one of the medical practitioners in this town, to assure the public there is no foundation for the reports in question, and that there is no fever whatever in this district, and that during the last three years we have been peculiarly free from that epidemic. And with reference to the drainage of the district (which was constructed under the direction of the most eminent engineer in such works), it is in a most efficient state; and that on the last survey of the late Mr. Austin, one of the superintending inspectors of the General Board of Health, about two years since—when he devoted two days to a minute inspection of the district, he expressed his entire satisfaction at the system of drainage; and stated that with a few additional flushing-tanks to some of the branch drains, the works would be most perfect. These flushing-tanks were immediately constructed, and are now constantly used; and I may add, that the main sewer is also constantly flushed by the flowing of a large body of water from a feeder from the Thames, which enters the sewer above the town and passes through, and thoroughly purges it at a considerable distance below the town. And with reference to fever, I have ascertained that, from the beginning of December last year, up to the present time, there has been but one death from that source—exclusive of the one the country so deeply laments—and that, with a population of about 10,000, the deaths have not been twenty in a thousand.

The Mayor has deemed it right to authorise this statement to prevent the spread of unnecessary alarm with reference to the condition of the town.

CHARLES STUART VOULES, Clerk to the Local Board of Health.

The *Medical Times*, in a lengthened article on the drainage of Windsor and the Castle, states that on a recent inspection by a competent member of the profession with the clerk of the works at Windsor Castle and the registrar of deaths and other officials, they came to a conclusion that "of the Castle sewerage we know no place where a more complete or more carefully-worked system of drainage is to be found, nor one which, considering the difficulties of the position, is more thoroughly successful. Gases undoubtedly do escape when the sewers are opened, but in such very small quantity as to prove both the extreme cleanliness of the sewers themselves and the absence of any ascending current of importance in them.

RESIGNATION OF THE DISTRICT SURVEYOR OF ST. JAMES'S.

AT the last meeting of the Metropolitan Board of Works a letter was read from Mr. Charles Mayhew, resigning his situation of District Surveyor of St. James's, Westminster. The letter was as follows:—

Office of the Surveyor of the District of St. James's, Westminster, 14, Argyll-street.

To the Members of the Metropolitan Board of Works.

GENTLEMEN.—Since writing my letter of the 2nd December to your honorable Board, requesting your sanction to the appointment of my brother, Mr. George William Mayhew, to perform the duties of my office as surveyor of the district until the end of this month, I have read in a public journal a report of the late proceedings of the Committee of your honorable Board appointed to consider matters relating to the Building Act, from which it appears that the whole of the duties of a district surveyor are to be performed personally, or by a deputy who has received the sanction of your honorable Board. I, therefore, consider it my duty to state that I am not prepared in future to perform the whole of the duties, and as I should—after having held the appointment for so many years without reproach, and having, I hope and believe, discharged the duties, with such casual assistance as I required, to the general satisfaction of the parishioners—be exceedingly annoyed to be personally rebuked for doing anything contrary to the regulations of your honorable Board, I feel the time has arrived that I either ought to apply for permanent assistance or to tender my resignation. After mature consideration, I have adopted the latter course, and beg to inform your honorable Board that from and after the expiration of this month I hereby resign my office, and do so with feelings of no ordinary regret, as I and my father were born in the parish; my father was for many years its district surveyor, and when he died, at the age of 75, I was unanimously elected by the magistrates of Westminster to succeed him (all opposition having been withdrawn before the election took place), and, therefore, it may be easily imagined that it requires no little fortitude on my part to cut the last tie of connexion with the parish in which, for three generations, the name I bear has been so well known, and, I am truly happy and grateful to say, so kindly supported. I hope that your honorable Board will excuse me for making these unnecessary remarks, but I could not refrain from doing so; and also for soliciting that my brother may be temporarily appointed to discharge the duties until my successor be installed. He intends to ask your permission to be a candidate for the office, and if your honorable Board think him qualified on his merits (which I believe him to be) to succeed me, it will afford me great gratification to know that the name will still be connected with the district. I have now only to thank your honorable Board for the courtesies which I have always received from it and its officers during the time I have had connexion therewith, and to remain, gentlemen, your most obedient servant and officer,

(Signed) CHARLES MAYHEW.

The resignation was accepted, and Mr. Kendall, surveyor of an adjoining district, was appointed to act in the room of Mr. Mayhew until his successor is appointed.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE following Address of Condolence of the Royal Institute of British Architects has been forwarded to the Right Hon. Sir George Grey, Bart., her Majesty's Principal Secretary of State for the Home Department, for presentation to her Majesty on the decease of his Royal Highness, the Prince Consort:—

The Dutiful Address of the Council of the Royal Institute of British Architects to her Most Gracious Majesty the Queen.

May it please your Majesty,

The President and Council of the Royal Institute of British Architects, on behalf of themselves and of the other members of their body, desire respectfully to approach your Majesty with the expression of their deep-felt sorrow and sympathy on the recent death of H.R.H. the Prince Consort, an irreparable loss to your Majesty, to the Royal Family, and to the whole of the British Empire.

The noble and amiable character of the Prince, as a husband and a father, had won the respect and gratitude of your Majesty's loving subjects. His high intellectual attainments and promotion of the Fine Arts, his patronage of science, and his enlightened support of every useful and benevolent work will render his memory enduring, as one of the great benefactors of the nation, and this Institute cannot but lament, in their late patron, a Prince whose loss they feel it impossible to supply.

This Council earnestly pray that your Majesty and the Royal Family may derive every support under this heavy dispensation of the Almighty, from the consolations of our holy religion, and from the contemplation of the virtues of a Prince so eminently estimable in all the various relations of public and private life.

Signed by,

WILLIAM TITE, President.	BENJ. FERREY.
THOS. L. DONALDSON, V.P.	JOHN B. WARRING.
M. DRAKE WYATT, V.P.	GEORGE EDMUND STREET.
GEORGE GILBERT SCOTT, V.P.	JOHN NORTON.
JAMES FERGUSON.	WILLIAM HAYWOOD.
CHAS. C. NELSON.	ROBERT KERR.
EDWARD M. BARRY.	T. HAYTER LEWIS, Hon Sec.
WILLIAM SLATER.	F. C. PENROSE, Hon. Sec. Foreign

[Correspondence.]

THE next Ordinary General meeting of the session will be held on Monday next, when a paper will be read by Mr. G. G. Scott, "On the Conservation of Ancient Architectural Monuments and Remains."

A Special General meeting of members only will be held on Monday, the 13th inst., to receive a report from the Council on "Professional Practice and Charges."

THE ARCHITECTURAL MUSEUM.

THE prizes for Colored Decoration, offered through the Architectural Museum by the Ecclesiological Society, have been awarded.

On opening the envelopes bearing the private marks attached to the specimens selected, the successful competitors were found to be—For the 1st prize of £5 5s., Mr. Joseph Peplow Wood, of 25, Brown-street, Bryanston-square; for the 2nd prize of £4 4s., Mr. A. O. P. Hamson, of 337, Euston-road; and for the 3rd prize of £2 2s., Mr. Charles J. Lea, of High-street, Lutterworth.

The twenty-two specimens sent in are now exhibited in the Museum.

The result of the remaining competitions will be made known when the adjudication has taken place.

CHURCH AND CHAPEL BUILDING.

Stratton Audley, Oxfordshire.—The parish church of this village has just undergone repairs and partial restoration at a cost of about £800. The works were commenced by taking down and rebuilding the chancel arch, which was in a most insecure condition, and by thoroughly restoring the woodwork of the roofs over the north aisle, which was much decayed, and renewing the leadwork. It was determined, during the progress of these works, to restore in a similar manner the coverings of the nave and south aisles, and this has also been done. The chancel, nave, and south aisle have been re-seated, a new altar rail has been provided, and the timbers of the chancel roof restored. The stonework of the windows has been repaired throughout, and several lights, or parts of lights, which had been blocked up, have been re-opened, and the whole newly glazed; internal drop arches in stone have also been substituted for wooden beams over the aisle windows. Several lesser improvements or restorations have also been effected in the interior. Want of funds has caused the intention of completing the restorations by a thorough repair of the external masonry of the church to be postponed. This church is an interesting and rather peculiar one. It contains a good deal of work of the Decorated period, and shows here and there traces of an earlier buildings, but was altered, not for the better, in the Perpendicular period. A fine north porch of late work forms the most remarkable feature of the exterior. During the works, several fragments of ornamental encaustic tile paving of good design were discovered. The works have been carried out by Mr. Selby, builder, of Oxford, and the carving done by Mr. Jacquet, under the superintendence of Mr. Roger Smith, architect.

Bury St. Edmund's.—St. James's Church.—We understand that another effort is being made for the restoration of the roof over the nave of this fine edifice. It is to be hoped that the effort may be attended with success; for the unsatisfactory state of the old ornamental ceiling, and of the present unsightly scaffolding, is a reproach to the town.

Oxford.—Isle Church.—This edifice has recently been re-opened for public service. The edifice, which was in a very dilapidated condition, has been restored throughout, from the designs and under the superintendence of Mr. E. Bruton, architect, even to the underpinning of the northern arcade, which was found to be in a very dangerous state. This arcade is the earliest part of the church, and was erected, probably, about the end of the twelfth century. The columns, with their caps and bases, were repaired where necessary, and a new arch inserted at the east end of the arcade. The church, which is generally of the fourteenth century, consists of a nave, aisles, and chancel, with tower, in the Perpendicular style, at the west end. The walls generally have been repaired, the bases of the chancel arch restored, and the windows of the south aisle have had their mutilated tracery restored. The tower arch and western window have been thrown open to the church by the removal of the old gallery. The passages have been paved with a pattern composed of Mansfield stone in three colors. A new porch has been built upon the site of the old one, new oak doors placed to each of the entrances, and new benches in nave and aisle, new reading-desk and pulpit have been provided, all in oak. The roofs have been repaired, several of them new slated, the old garret windows removed, and the timbers brought to an even color. The windows of the south aisle have been filled with Powell's quarries. The chancel was built in 1680, in the style prevalent at the period; but the upper six feet of the walls have been removed, and the windows replaced with new ones having geometrical tracery. A high pitched open timber roof has been substituted for the depressed roof of Dr. South's time. The chancel has also been new seated, and the floor paved with marble squares and encaustic and plain tiles in various colors. Mr. Wyatt, of Oxford, was the builder, and the whole of the alterations have been effected at a cost of about £1,800.

York.—Arncliffe Church.—This church, which had been closed for alterations, &c., was re-opened on Christmas Day. Amongst the improvements, open benches have been substituted for the old-fashioned high pews, which choked up the area of the chancel. The aged poor are now accommodated round the pulpit, in place of being seated, as formerly, in a remote corner of the church. The new church furniture comprises a lectern, carved in oak by Mr. Matthews, of Leeds, and an octagon pulpit in Caen stone, with marble pillars, and panels with medallions containing figures of Christ and the Evangelists in relief, carved by Messrs. Mawer and Ingle. The designs were furnished by Mr. Arncliffe, architect, under whose direction the restoration has been carried out.

Osgathorpe Church, Leicester.—On the 17th ult. this church was re-opened. It was originally built during the thirteenth century. In restoring it care has been taken to preserve its original character. It has been enlarged by an apsidal termination at the east end, in order to gain additional seats; in doing which the arch of the east window has been made use of to form the entrance to the apse, the mouldings being brought down to the ground. A new roof has been put on, the principal timbers being supported by stone corbels. The benches are of pitch pine varnished. The floors to the aisle, apse, &c., are laid with Whetstone's Coalville tessellated tiles in pattern. The pulpit is of stone, moulded. The reading-desk, of pitch pine, has a panel front to support the book-desk. The octagonal font has been restored. A stone porch has been erected, and a bell-turret in wood, with spire covered with lead, has been placed at the west end. The works have been carried out from designs and under the superintendence of Mr. J. Mitchell, of Parliament-street; the contractor was Mr. Garland, of Nottingham.

St. Michael's Church, Bromley.—On Saturday last the Right Rev. the Lord Bishop of London opened the first instalment of this edifice. The portion is the boy's school; when the funds will permit, a girl's and infant schools will be built, and also a suitable church. The school-room now opened will seat 650, and afford accommodation for the instruction of 250 or 300 boys, with suitable class-rooms adjoining. The site cost £900, and the buildings now erected have cost about £1,700. £6,000 more will be required to complete the church and schools, and residences for the master and mistress. The architects are Messrs. Morris and Sons, of London-street, City. The contractor is Mr. Brown, of Ratcliff. The school-room now opened is 78 feet by 33 feet, in the pointed Gothic style, with an open timbered roof of stained deal. In addition to the class-rooms, there are lavatories and other conveniences. The building is constructed of brick, lined internally with white brick, and the arches are decorated with colored bricks. Over the altar there is a motto, and another over the principal entrance. Two sunlights are to serve the purposes of ventilation and of lighting. The ventilation is also assisted by movable louvres in the roof. The recesses on one side of the building are filled up with the Beatitudes from the Sermon on the Mount, painted in colors on zinc. Externally, the building shows colored bricks in the arches and string courses.

Worcester.—New Aisle in St. John's Church.—The ceremony of consecrating this addition took place a few days ago. A local authority says, respecting the work:—"When viewed from the Bromyard-road, the character of the church, on the north, is seen to have been completely altered, and a change effected which must be gratifying to those who have subscribed their money for the alterations, as well as to every admirer of the Pointed style of ecclesiastical architecture. The spectator has now before him a building in the Early Decorated style, with walls of Ombersley stone, with Bath stone windows and dressings, and a roof covered with tiles ornamentally arranged. There are four two-light windows on the side. Unfortunately the accommodation required in the church has rendered a gallery necessary, and in consequence of this, stone transoms have been carried across the windows, and this rather tends to make them look heavy. The east end has a window of similar shape to those in the side. A large rose window, also filled with tracery, has been introduced into the angle of each of the gables. The wall is strengthened with buttresses. The gables are ornamented with foliated crosses. The roof is covered with tiles laid in bands of red and black, the red bands being also crossed diagonally with black tiles. The new aisle is 57 feet in length, and 22 feet in width; the old aisle was 17 feet 6 inches shorter, and only 11 feet wide. The increased sitting room obtained by the alterations will accommodate 253 persons. Mr. Perkins is the architect, and Messrs. Hemming and Son the contractors.

CHAPELS.

Durham.—New Methodist Chapel.—The New Connexion Methodists have erected a chapel, in the Early Pointed style. Stone has been used throughout the building. The entrance is by a porch with trefoil-arch opening, splayed jambs, moulded labels, &c. The gable end fronting the street is pierced with pointed arch windows, the openings having splayed jambs. The interior fittings are of Petersburg pine, wrought, stained, and varnished. A platform is provided in a recess of the rear gable for public meetings, as well as for the usual Sabbath service. Adjoining the chapel is a vestry with an entrance from the porch. Mr. G. Kyle, architect, designed the building, which was erected by Mr. James Smith.

Bristol.—Chapel on the Batch, St. Philip's.—The new chapel now being completed at this place was erected by Mr. Yalland, the contractor, in the short space of three months. It is built in connexion with the body of Christians called the Brethren. It is estimated to accommodate 1,000 people, and the cost will be between £2,000 and £3,000.

THE THAMES EMBANKMENT.

A Bill for the Thames embankment has been printed and circulated, and the plans and sections are deposited with the clerk of the peace and other authorities under the standing orders. From these documents we learn the general character and extent of what is now proposed, and which are as follows:—The embankment starts from the lower side of the New Westminster-bridge, ranging with the face of the abutment of the new bridge, and continues in a curved line, following what is generally called Page's line, to the back of the first abutment of Waterloo-bridge. It then starts again from the lower side of Waterloo-bridge at the corresponding point, and proceeds in a similar curved line until it terminates abruptly against Blackfriars-bridge, 2½ chains nearly, or about 100 feet, into the river beyond the present wharfs and houses. The embankment is solid throughout, and the projection into the river, in some cases very considerable, is to be filled in by soil taken from the Thames, or otherwise obtained. The height of this new wall from Westminster-bridge to the east side of the Temple is to be 4½ feet above Trinity high-water mark. From that point the embankment ascends rapidly by a steep viaduct to the level of Blackfriars-bridge. This viaduct, we presume, would stand on the level of the embankment, and would be 40 feet above low-water mark. On the surface of the land thus gained there is first to be a public road 190 feet wide from Westminster-bridge to the Temple, where it is to become 70 feet wide only. In addition to this road or street, property is also scheduled for the following new streets, viz., first, an entirely new street from the Banqueting-house at Whitehall down to the river; secondly, Whitehall-place is to be continued down to the river, and will form part of an entirely new street between the Strand and the river, terminating at Waterloo-bridge, just opposite the new wing of Somerset House; thirdly, Norfolk-street, Surrey-street, and Arundel-street, are to be made to join the river by a common communication to the new road; and lastly, from Blackfriars-bridge a new street is shown from the bridge to the Mansion House, joining also New Cannon-street. This street proceeds first obliquely, and then nearly parallel to the river, avoiding the Times office, the Equitable office, and Apothecaries' Hall, where it goes off at an obtuse angle, and is continued across New Cannon-street, to the front of the Exchange and Mansion House. The Bill constitutes a board for carrying these enormous works into effect, consisting of the chairman and four members of the Metropolitan Board, and two members of that Board returned by the Corporation of London, thus forming a board of seven members in all; it empowers the borrowing of one million and a half of money, and gives compulsory powers of purchase, sale, &c., in the usual way. It enables the Board to deal with the Chatham and Dover Railway and Bridge, but the Hungerford, Blackfriars, Westminster, or Waterloo bridges are not to be interfered with, and the levels appear very embarrassing. Houses may be built on any of the vacant lands, subject to the approbation of the Board of Works, but none are to be built in front of the Temple.

The Low-level Sewer is but slightly referred to, the only clause relating to it being one empowering and directing the Board to facilitate its construction.

The Commissioners appointed to inquire as to the propriety of embanking the south side of the Thames met again yesterday, the Lord Mayor presiding.

Mr. Crosby said he was engaged by the Metropolitan Board of Works, and he had the superintendence of portion of the main drainage works on the south side of the river. He found that in the district of Rotherhithe and Bermondsey the houses were from time to time flooded. He also found that when trenches were dug make sewers, the water in them rose and fell with the tide. If he had unlimited authority he would carry out an embankment along the whole side of the river, whether on the present line or not must depend on the conveniences of trade, which must be pre-eminently considered. At Lambeth an embankment, such as Mr. Cubitt made at Pimlico, he should recommend—at Rotherhithe a perfect

wall only. As to Fore-street, he should suggest either that much land should there be reclaimed, and the road widened, or else it should be widened by pulling down present buildings. He could conceive that puddling might improve the state of things, but he did not see how it could possibly be carried out. The main drainage will do much to improve matters, but not entirely arrest them. It will at once drain the water from the cells. On the question of taxation he should suggest tonnage dues on all articles coming into the port of London, thus taxing the whole country. It would not answer equally to pay the cost out of the Consolidated Fund, as by the plan he proposed the trades benefited by the embankment would pay. He did not think that the octroi system, though it succeeds well in France, would answer here. He agreed with the Lord Mayor, and would not impose it here if he could. He then produced the plans and sections of the banks of the river and the low-lying districts.

Mr. Pegg, of Bankside, who had premises abutting on the river, explained that floods took place in the manner already described, and he recommended an embankment and a roadway. He was one of a commission some years ago appointed to raise Bankside. They did not raise it so much as they intended owing to the opposition of the wharfingers. He described the misery occasioned to the poor of the district as most shocking. The cost of construction was so great as to cause much opposition. Although not carried so high as was intended, it had done great good.

After some further evidence, the inquiry was again adjourned.

ALLEGED FRAUD BY A CLERK OF WORKS.

WILLIAM BRITTAIN, clerk of the works at the new building in course of erection in Bennett's-court, Drury-lane, by the Central London Dwellings Improvement Company, having been charged at Bow-street by Mr. Brown, the architect, with obtaining money under false pretences—

The prosecutor, Mr. Thomas Henry Johnson Brown, of Robert-street, Adelphi, deposed: I am an architect and surveyor, and I engaged the prisoner as clerk of the works in the buildings now being erected under my superintendence in Bennett's-court. His salary was £2 2s. a week. It was his duty to engage the men employed there, and to account to me for the work done each day, and the amount of wages. He had to make up a weekly report, called the pay-sheet, containing the names of the men. I now produce one of these returns, that for November 1st. In that return a man named Curley is charged as a laborer at 4s. 6d. per day, and the amount due to him as £1 0s. 2d. I discovered that this man has never received 4s. 6d. per day, but has been paid 3s. 4d. In all the bills he is charged at 4s. 6d., and he has been really receiving but 3s. 4d. all the time. In this bill there is also a charge of £1 1s. for another laborer named Davis, at 3s. 6d. per day. I find he only received £1 a week. A man named Murphy, also charged at 3s. 6d. a day, has only received £1 a week. Indeed, I believe that the same rule applies all through. Believing the amounts charged to be correct, I have from time to time supplied the prisoner with the money to pay them. The accounts are made up to each Friday. Upon my attention being drawn to the matter, I accused the prisoner of charging me more than he paid the men, and he said that the account was correct, and that he had in every case paid what was entered, and had made the men sign the book on receiving their money. I looked to the book, and found that it was signed as he stated, but the amounts had not been carried out, so that what they signed was simply the number of days and hours, without even the rate per day.

The prisoner alleged that the amount was always carried out in pencil before the men signed. They wrote their names over the pencil marks, which, therefore, were partly obliterated, but if examined with a microscope, they would be found to have been written before the signatures.

Several witnesses were examined in support of the charge, and the prisoner was committed for trial.

THE MASONS' STRIKE.

THE various lodges composing the London branch of the Operative Masons' Society have, under the sanction of their executive council, decided upon continuing the strike against the hour system (which has lasted now for eight months) during the ensuing winter months and until the commencement of the building season in the spring. It is said they have taken this step after due deliberation, and well considering their own position, as well as that of those employers who have adopted the hour system. The men state that they have a large proportion of their number at work under the terms of the compromise, and that the smaller number are weekly giving in their adhesion to those terms, and that while the society has had but few secessions from its ranks, a greater number of non-society men who had previously stood aloof have joined it. The number of employers who adopt the system of payment and engagement by the hour has not increased one since June last; that, while the London yards and jobs of these employers are, with one or two exceptions, but inefficiently manned, their country jobs are, and have been for some months, almost at a standstill. They therefore consider the balance to be in their favor. The Masons' Society have hitherto allowed each member on strike 10s. per week from the general fund, at an expense of several thousand pounds; but to prevent this fund being reduced beyond prudent limits, and at the same time to meet the expenses consequent on the prolongation of the dispute, a proposition is now before the lodges of the society for a weekly levy of 6d. per man on each of their 12,000 members, which, it is expected, will come into immediate operation. A fresh impetus has also been given to the general trades' subscriptions; among others, the general union of carpenters at Nottingham have voted a levy of 6d. per man, which has produced nearly £100. A public demonstration of the London trades is shortly to be held upon the subject. The number of masons now on the strike-books is about 300.

ARCHITECTURAL ASSOCIATION.

THIS (Friday) evening there will be a meeting of this body, when the adjourned discussion on Mr. Blashill's paper, "A few days at Chartres and other French Towns," will be resumed.

ELECTION OF DISTRICT SURVEYOR FOR CHELSEA.—This day (Friday), the Metropolitan Board of Works will proceed to the election of a gentleman to fill the vacant office of surveyor for the district of Chelsea.

DECISIONS IN THE COURTS.

CASE UNDER THE BUILDING ACT.

Timber Structure.—At the Greenwich Police Court on the 14th ult., Mr. Samuel Cooper was summoned by Mr. William Snooke, District Surveyor of St. Mary, Rotherhithe, for erecting a building comprised wholly of wood and timber, contrary to the provisions of the Metropolitan Buildings Act.

A second information was also laid against the same defendant for erecting the said building without giving two days' notice thereof to the surveyor.

Mr. Snooke stated that he discovered the building in question, erected in September last, upon premises in the occupation of the defendant, who is a stonemason, carrying on business at Clarence-wharf, Rotherhithe; that the said building was wholly of wood, 15 feet long, 8 feet wide, and 9 feet in height, with windows and door, and used as a counting-house; that it was mounted on a wooden cill, and access was had to it by means of a ladder; that there was no fire-place, but it was possible to have gas burnt in it; that it was not attached to any other building, but was within 6 or 8 inches of the wharf belonging to the Surrey Gas Consumers' Works. Mr. Snooke stated that the building had been constructed without notice being given to him in the first instance, and that, on discovering the same, he had, on the 28th October, caused a Notice of Irregularity to be served on the defendant requiring him to amend the same within forty-eight hours; that the defendant had neglected to comply with that notice, but had subsequently applied to the Metropolitan Board of Works for their permission to allow the building to remain, which permission had, however, been refused.

It was contended on behalf of the defendant by his solicitor, Mr. John Butler, of Tooley-street, that the structure in question was not a building within the meaning of the Building Act, that it had been constructed many years and had small iron wheels or rollers by which it could be moved from place to place, and that it had been brought to the defendant's yard, and removed from one part of the yard to another within the last two years.

It was admitted that the structure in question was used as a counting-house, that there was no fire in it, but that it was possible to have gas or lights burnt therein.

Mr. Traill, the magistrate, said, looking at the dimensions of the building and the purposes for which it was applied, and which probably would require the use of artificial light and possibly heat, he considered that it was within the description of objects intended to be provided for by the Act of Parliament, and convicted the defendant in a penalty of 15s., and 42s. costs, for neglecting to give notice to the surveyor, and ordered the building to be amended in conformity with the first section of the first schedule of the above named Act.

PARISH ASSESSMENT ON A RAILWAY COMPANY.

At the Lewes Quarter Sessions, on Tuesday last, an appeal was heard against an assessment made by the overseers of the parish of Playden upon the South-Eastern Railway Company, in respect of a portion of the Ashford, Rye, and Hastings Branch Railway, and some surplus land in that parish.

Mr. Johnson (specially retained), with Mr. Gates, instructed by Mr. Rees, the Company's solicitor, appeared for the Company.

Mr. Ryde, surveyor to the Company, proved that the rateable value of the railway in the parish was less than £17 10s. per mile (a sum at which the Company were willing to be assessed). Mr. Whately, auditor of the traffic accounts, and Mr. Chubb, accountant to the Company, proved the correctness of the accounts which had been supplied to Mr. Ryde, and upon which his estimate was based.

Mr. Ashcroft, the engineer to the Company, Mr. Cudworth, their locomotive superintendent; and Mr. Mansell, their carriage superintendent, were also in court, but were not called.

A correspondence between Mr. Ryde and the parish officers was read, to show that the company had offered to be assessed at the rate of £17 10s. a mile for the railway, and £5 for the surplus land.

The court ordered the rate to be amended by reducing the assessment upon the railway from £80 to £16 (being at the rate of £17 10s. a mile), and on the surplus land from £18 to £1.

They also adjudged the parish to pay the costs of the Company, which amounted, after they had been reduced by taxation, to £161.

Correspondence.

LICHFIELD CATHEDRAL CHOIR SCREEN.

SIR,—I hope that through the medium of your interesting paper you will allow me to state that the statues of angels at Lichfield Cathedral, spoken of in your paper of November 22nd, and again on the 29th, in a letter by "Vindex" referring to the same statues, and bringing them to the notice of Mr. John Bell, the eminent sculptor, in proof that the highest order of sculpture is in harmony with Gothic architecture, were designed and executed by me for Mr. Skidmore, of Coventry.

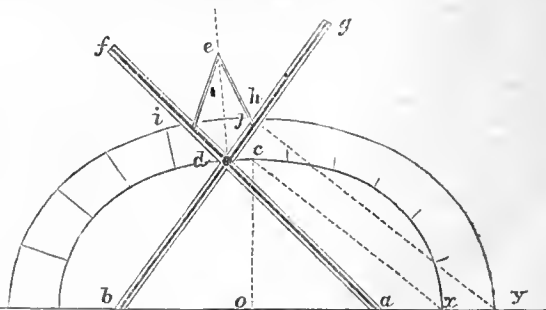
R. L. BOULTON, Sculptor.

Worcester, December 24th, 1861.

JOINTING ELLIPTIC ARCHES.

SIR,—I wish again to draw your attention to a subject which was discussed in your paper a few months since.

Your correspondent "W. Y." then pointed out the method adopted by P. Nicholson for drawing the arch joints. Now with a view of reducing the amount of labor which the adoption of that method entails I have devised a simple plan by which the operation is reduced to a mere mechanical one. It may be described as follows:—



Two bars, (*af, bg*), with grooves down their centres, are fixed so as to revolve each round one of the foci of the ellipse, *ab* respectively; they are connected by a pin, *d*, which slides in the grooves of each, to which is attached a rhomboidal framework (*efijh*), moveable at all its angles, two of which, *h, i*, are so united as to slide in the grooves.

It is easily seen that if the pin is placed on that point of the curve at which it is required to draw the joint, the line joining it, and the extreme angle, *e*, of the framework is the line of such arch-joint.

The two foci are the points from which the ellipse would be described by means of a cord—a method well known to workmen.

The ellipse for the extrados can easily be described in this manner:—the depth of the

voussoir must be set out on the base line, xy , and a line, y/h , drawn parallel to one from x to the crown, will cut off on the vertical through the centre the depth of the keystone; the foci of the ellipse can then be found by describing from the centre, A , a circle of radius, oy , which will cut the base line of the arch in the points required, if the ellipse is to be described with a cord, but if the trammel is employed no such construction will be necessary.

H. JARVIS, JUN.

GENERAL NEWS.

THE HOURS OF RAILWAY ENGINEERS.—A meeting of railway engineers and railway engine-drivers took place in the neighbourhood of Manchester on Christmas day, to consider the propriety of forming an association for the purpose of shortening the hours of railway engine-drivers. It was stated at the meeting that the country had derived the greatest benefit from the operation of the Ten Hours' Bill in factories, and were grateful to the men who promoted it. Such a movement was wanted for the engine-drivers on railways, and it was hoped that when the public saw the engine-drivers were in earnest themselves upon the subject, they would willingly come forward to assist in the cause. The association was formed, and the meeting separated.

NEW PLASTIC COMPOSITION.—According to the *Engineer*, Mr. J. S. Manton, of Birmingham, has recently patented an invention which is destined to effect a revolution in the material of which many articles of manufacture have hitherto been made, besides introducing a new plastic composition, capable of infinite application to the fine arts. The composition consists of mineral, earthy, arenaceous, or other like substances; animal shells of any kind, such as pearl or oyster, powdered glass or pebbles, marble, slate, basalt, slag, &c., are some of the substances used. These, being powdered, are mixed in certain proportions, and are amalgamated, under great heat, into a paste. In this state the material is capable of almost any application. It can be transferred to dies, and takes the sharpest possible impression of the most delicate ornament. It can be produced in almost any color, and acquires a surface equal in polish and finish to the finest ivory, whilst it is pleasant and agreeable to the touch. Ornaments, picture frames, inkstands, chess and draughtsmen, fancy articles of every description, and buttons in any size or pattern, are a few of the uses to which the material can be applied.

COAST BAROMETER INDICATORS.—Captain Washington, the Admiralty hydrographer, has addressed to the Lifeboat Committee an interesting letter on the working of the barometers and barometer indicators erected at three stations on the Northumberland coast. He found that seafaring men were taking an increasing interest in them, and paying more attention to the information thus afforded. He gives instructions for several alterations with a view to making the instruments more conspicuous at a distance; and recommends that they should be illuminated at night, and that no port should be without one. We hope that the recent storms will furnish a sufficient motive for carrying out these important suggestions.

ARTIFICIAL STONE.—According to a patent just obtained by Mr. F. Ransome, of Ipswich, for the manufacture of artificial stone and cement, he proposes to mix broken or powdered chalk with the silicates of soda or other alkali, and mould the compound into blocks or shapes afterwards. When the blocks or shapes are dry and hard the surface is washed over with a solution of chloride of calcium, or other soluble salt of an alkaline earth, or with a solution of chloride of aluminium or iron, in order to ensure as far as possible the conversion of the soluble silicate into an insoluble silicate of lime or other alkaline earth, or of aluminium or iron. It is preferred in producing artificial stone in this manner, that the chalk should be in a finely powdered state, and that it should be mixed with a solution of silicate of soda, so as to produce a plastic mass; the silicate of soda being such as is now commonly employed in the manufacture of artificial stone, and by preference of a specific gravity of 1.700. The proportions of materials by weight are as follows:—Of chalk, 5 parts; quick lime, 1; solution of silicate of soda, sp. gr. 1.700, 1; diluted with water to work to the consistence required. Or, chalk, 2 parts; slaked lime, 1; sand, 8; clay, 1; silicate of soda, sp. gr. 1.700, 2. Or, sand, 8 parts; clay, 1; quick lime, 1; solution of soluble silicic acid, sp. gr. 1.700, 2. If the mixtures are required for use as cements or plasters they should be mixed thinner, and the solution of soluble silicate should be of less specific gravity. These compositions should be moulded or applied as soon as they are mixed, as they set rapidly.

COST OF IMPROVEMENTS AT LYONS.—The Lyons journals publish a statement of the cost of the improvements effected in that city since 1854, including not only the sums expended there by the state, the department, and the city, but also by the railway companies, private individuals, &c.:—1. The improvements in the centre of the town, Rue Impériale, Rue Centrale, Rue de l'Impératrice, Rue Grenette, adding 70,000 square metres to the public thoroughfares, 35 millions of francs; 2. The making of new streets in the 3rd arrondissement, and improving old ones, 10 millions; 3. Creation of a park of 100 hectares (250 acres), and public works, 4 millions; 4. Water service, sewers, and paving, 15 millions; 5. New thoroughfares for facilitating communications with outlying quarters and the faubourgs, 5 millions; 6. Quays and works to prevent inundations, 16 millions; 7. Markets, 3 millions; 8. Municipal buildings, 10 millions. Total, 98 millions. In the above are not included considerable works executed with the ordinary resources of the city budget. To give a correct idea of the money expended in improvements at Lyons since 1854, there must be added—works executed by the railway companies, for carrying their lines through the town, 75 millions; and 280,000 square metres of private buildings erected within the last seven years, estimated to have caused an outlay of 20 millions.

BAR IRON.—A remarkable specimen of wrought-iron has lately been produced by the Butterley Company, at their iron-works, near Alfreton, consisting of bar iron 11 inches wide rolled in groove rolls. These bars were required in various lengths up to 47 feet long. These they resolved to roll in one length, in which they have succeeded in the most satisfactory manner; and one 57 feet has been produced, 11 inches wide, by $\frac{1}{4}$ ths of an inch thick. The bars were rolled off without the process of re-heating.

MANCHESTER FREE LIBRARIES.—The report of the four Manchester Free Libraries for this year shows an increase in their means of public usefulness, as well as an increase in the interest in which they are regarded by the public. The libraries have materially extended during the year, in a good measure from donations of books; and the mean daily aggregate of volumes put into the hands of readers has increased from 1,250 in 1860 to 1,960 in 1861.

IMPROVEMENTS IN BUILDING, &c.*

IMPROVEMENTS IN THE MODE OF, AND APPARATUS FOR, WARMING AND VENTILATING ROOMS AND BUILDINGS.—Dated May 24, 1861.—C. Batty.

This invention consists—1. In bringing the external atmosphere direct to the fire-grate, that the fire may be supplied with pure air, and without the assistance of the air in the room in which the fire is placed. The air is introduced into a chamber beneath the grate, where it is divided into several currents by flat bars or current directors, part of the air being conducted underneath the grate, and enters the fire at the bottom, and part is directed to the front of the fire to compress the smoke to the fire and cause it to be burnt. As the air which is supplied to the fire is independent of that existing in the room, there is no draught, as the air at or near the floor of the room is not used for the supply of the fire. 2. The bars of the grate are made much broader than usual, and are placed in an oblique direction, and serve to direct the air to the fire, and thus consume the gases generated by the same. 3. Part of the air supplied from the external atmosphere, as before described, is directed to a chamber constructed round the grate, where it is heated. The air thus heated is admitted and directed by suitable apertures or valves into the room, to warm the same, and causes a true circulation. A detailed description of the apparatus was given in our pages some time since.

CONSUMING AND DESTROYING SMOKE AS EMITTED FROM ENGINE OR OTHER CHIMNEYS, AND FROM ALL OTHER FLUES FROM WHICH SMOKE IS EMITTED.—Dated May 18, 1861.—R. King and K. Robson.

This invention consists in consuming or condensing the smoke from furnace or other flues, in such a manner that, when emitted from the shaft or chimney, it shall be comparatively colorless. The inventors propose drawing the smoke, as emitted from the furnace, by means of a fan, pump, or propeller, worked by any suitable power, through a down-cast pipe or tube into a vessel of water at the lower part of the chimney or shaft, so that the smoke, however dense, shall pass into or through the water, thus depositing the narcotic properties of the smoke at the bottom of the water, leaving the rarefied portion to pass upwards into the chimney or shaft, perfectly free from soot or other impurity, by which means, when such smoke is emitted into the atmosphere, it assumes more the appearance of steam, or almost a colorless vapor.

IMPROVEMENTS IN PORTABLE COOKING APPARATUS (A communication).—Dated May 23, 1861.—R. A. Brooman.

These apparatuses consist, 1, of a hollow upright, screwed into or otherwise fixed on a stand; upon the upright is a sliding collar adjustable by a thumb-screw, and formed with an eye for the reception of a pintle formed in a piece with or fixed to an open work plate or frame for the support of pots, pans, or of other articles requiring to be exposed over the fire. Sometimes a rod or bar, having hinged to the top of it a circular or other shaped disc to serve as a table or as a screen, is inserted in the hollow upright, and is adjusted to the height required by means of a pressure screw. The second apparatus consists of a stand carrying two frames, each of which supports a cranked upright, terminating at top in an eye, through which a horizontal bar is passed. On each of these bars is a running collar for supporting a plate or frame for holding articles requiring to be exposed to the fire, similar to the plate first mentioned.

IMPROVEMENT IN FLOORS.—Dated May 21, 1861.—R. Preece.

This consists in forming spring floors, especially suited for dancing on, by placing the sleepers or beams which support the joists upon blocks of India-rubber, or upon spiral or other suitable springs.

VENTILATING DWELLING-ROOMS, &c.—Dated 23rd May, 1861.—W. Tebbutt, Loughborough.

This invention consists of the arrangement and combination of parts constituting the apparatus constructed as follows:—In setting forth this invention the patentee proceeds to describe it as applied to a house or like structure. He premises, for convenience of description, that a house or other like structure is about to be built, and it is desired to ventilate the same. For this purpose he proceeds in the following manner:—In the floor level with the street he inserts a pipe extending from the front side of the house to the back thereof, and the ends of this pipe he covers from view by means of a pierced, plain, or ornamented grate, or in other suitable or convenient manner; and at about the centre of the length of the pipe he cuts away a portion thereof, and attaches a chamber, which is divided in two parts by a partition lying at right angles to the length of the pipe. To the upper part of the chamber he attaches a vertical pipe of the same diameter as the pipe or pipes in the floor; this vertical pipe he inserts in one of the walls of the building, or it may form a hollow pillar, where pillars are used to support the floor above. The top of the pipe or pillar projects into a similar chamber to the one appertaining to the horizontal pipe in the first floor; the end of the pipe or pillar stands up a few inches above the bottom of the chamber, and from the bottom of the chamber one or more pipes proceed to each room; the other ends of the pipes terminate in one or more orifices in the ceilings of such rooms. The upper part of the second chamber is connected to a similar vertical pipe or pillar as before mentioned. The pipes and chamber or chambers are repeated in each story. The vertical pipe or pipes is or are then continued from the top ceiling to the ridge of the roof, where it or they terminate a few inches upward from the bottom of a tube or tubes of a larger diameter, which projects above the roof outside. This tube is also surrounded with a still larger tube, the bottom of which is set a few inches clear above the roof, and the top is furnished with a cowl or cone to prevent any downward draught.

IMPROVEMENTS IN THE CONSTRUCTION OF SUSPENSION BRIDGES.—Dated May 29, 1861.—A. Ondry.

This invention consists in constructing suspension bridges in such a manner that, when any one portion of the platform or roadway is subjected to a greater burthen than other portions, it does not become distorted or put out of shape, neither is the structure itself liable to oscillate. The platforms of suspension bridges, as usually made, are connected to one or several flexible or jointed cables or chains, the whole being equally balanced under the weight of the structure, and being flexible are capable of being put out of shape; the action of an overload applied to one particular part of the platform alters the equilibrium and produces a distortion, and, consequently, a fresh equilibrium has to be found. The distortion is increased in proportion as the overload is applied to the platform of the bridge in a confined space; it is, however, decreased in proportion as the overload is applied to a larger portion of the length of the platform, so that, if this overloading is spread over the whole length of the platform, the primitive equilibrium will be practically maintained. So a suspension bridge, although made with flexible chains, would become a rigid bridge, provided the platform were sufficiently rigid to overcome any effect of partial or undue overloading. This invention further consists in preventing the suspension chains from losing their original curve, and although still flexible, they will not be deranged by an excessive or partial loading of the platform.

HARDENING AND PRESERVING STONE.—Dated June 6, 1861.—Jesse Rust.

For these purposes the stone is washed over with, first, a solution composed of caustic baryta, or bi-carbonate of magnesia, or both; and, secondly, it is washed over with a solution composed of fluoride of silica, or a fluoride of alumina.

APPARATUS FOR MAKING BRICKS.—Dated 6th June, 1861.—J. Platt and W. Richardson, Oldham.

This invention relates, first, to sifters or screens for clay intended to be moulded into bricks, and consists in directing a blast of air from a narrow opening against the outward surface of the said sifter or screen, so as to keep the meshes clear. Secondly, the invention relates to that part of the mould of brick machinery by which the pressure is given to the material, and consists in forming such part in two or more pieces, adapted to move independently of each other, so as to effect a slight opening for the escape of air, such pieces, however, being so arranged as to be capable of being forced forward simultaneously when desired.

TENDERS.

For a mansion, stables and lodge, at Westwood, near Leeds. Mr. George Corson, architect.

Excavators, Mason and Bricklayer.			
Pounder	£4,298 9	Wilson	£3,120
Moxon	3,250 0	Whitley	2,985
Carpenter and Joiner.			
Thorp	£2,884 15	Winn and Pawson	£2,059
Nicholson and Son	2,125 0		

Slater.			
Ellis	£306	Watson	£354
Croft	369		

Plumber and Glazier.

Story			
Webster and Son	£626 10	Water main pipe.	£128 0
	599 0		94 17

Smith.			
Bingley and Co.	£167 8	Nelson	£150 3 6
Green	165 0	Singleton and Tennant	113 19 0

Plasterer.			
Garlick	£466 0	Branton	£350
Wilson	439 6		

Painter.			
Simpson	£165	Jackson	£70 0
Hummerston	80	Wood and Son	67 7

* Accepted.

COMPETITIONS OPEN.

BRIDGE.

BRISBANE RIVER.—The Municipality of Brisbane are prepared to receive designs and tenders for the construction of a bridge over the Brisbane river, at Brisbane, the capital of Queensland. The author of the best design, at the lowest cost, will receive a reward of £150, or be employed to carry the work out, providing he furnishes sufficient proof of his competency and experience in similar undertakings. A premium of £80 will be awarded to the next best design, and £40 for the next best. The plans, specifications, and estimates of the first and second designs will be retained by the Corporation as their property. The remainder will be returned to the competitors; but the corporation will incur no responsibility as to their safe delivery. Each set of drawings, and the documents accompanying them, are to be distinguished by a motto only, and accompanied by a letter in a sealed envelope, marked with the same motto, and containing the author's name and address, and such testimonials as he may think proper to furnish. Professional judges, being non-competitors, will be appointed by the Corporation to determine the merits of the respective designs. Eligible tenders for the work, accompanying the design, will be entertained. All drawings and tenders to be delivered at Gresham House, on or before the 15th of March next. Copies of the instructions to competitors, and the plan of the city, can be obtained of F. Mangels and Co., the Colonial agents, and agents to the Municipality of Queensland, 86 to 88, Gresham House, Old Broad-street, London, E.C.

GASWORKS, &c.

MALPAS.—Plans, specifications, and tenders are requested for the erection of gasworks, meters, service pipes, and mains for the town of Malpas. The gasometer to supply not less than 250 lights. Plans, tenders, &c., to be sent to Mr. Wycherley, Malpas, on or before the 10th January.

CATTLE MARKET.

GLOUCESTER.—For designs for laying out and improving the present cattle market at Gloucester. Architects may obtain a plan of the site and particulars of instruction upon application to William McLandsborough, C.E. chamberlain of the said city. Corn Exchange, Gloucester, to whom the designs are to be sent, on or before the 11th day of January, 1862. The Council propose to give a premium of £25 for the plan selected, the plan to be the property of the Council, who do not bind themselves to carry out the plans, or employ the architect of such designs, but in case they do so the premium under such circumstances to merge into the commission, which will be £5 per cent. upon the outlay. If the plans sent in are not, in the estimation of the Council, of sufficient merit, the premium will not be given.

THAMES EMBANKMENT.

LONDON.—The Commissioners are open to receive plans for embanking the Surrey side of the river Thames, within the metropolis, which will conduce with the greatest efficiency and economy to the improvement, embellishment, and convenience of that part of the metropolis, will improve the navigation of the river, and will provide a public thoroughfare without stopping such trade as must be carried on upon the bank of the said river. Plans must be sent in on or before Monday, the 13th January.

CONTRACTS OPEN.

GAOL.

MONAGHAN.—For the alterations and additions to Monaghan Gaol. Plans, &c., to the 2nd of February next, at the gaol, and at the office of the architect, Mr. John McCuddy, 24, Westland-row, Dublin. Sealed tenders to be delivered at the gaol, before 3rd of February.

DWELLING-HOUSES.

DUMFRIES (N. B.).—For the mason, joiner, and other works required to erect and complete the following buildings on the Estate of East Tinwald, for Mr. Carthew Yorston, Esq.:—1. A dwelling-house and steading of offices on the Farm of Fernyleuch. 2. Two cottages on the Farm of Fernyleuch. 3. A dwelling-house and steading of offices on the Farm of Bruntshields. Plans, &c., with James Barbour, architect, Dumfries, to whom tenders on or before January 28th.

CHAPEL.

ABINGDON.—For the erection of the new Independent chapel, Abingdon. Plans, bills of quantities, &c., on application to the Rev. S. Lepine, Abingdon, to whom tenders are to be delivered by 12 noon on January 14th.

PARSONAGE.

IPSWICH.—For pulling down and rebuilding the parsonage of St. Mary-le-Tower, Ipswich. Plans, &c., with R. M. Phipson, architect, Museum-street, Ipswich, on and after the 27th December, and all tenders are to be delivered to him, sealed and endorsed "Tender for Parsonage," on or before the 7th January.

RECTORY.

RADNORSHIRE.—For building a rectory-house and offices at Norton, near Prestelgn, Radnorshire. Plans, &c., with Thomas Nicholson, F.R.B.A., diocesan architect, St. Peter's-square, Hereford. Tenders to be delivered to the architect, on or before the 18th of January.

SCHOOLS.

HASLINGDEN.—For the whole or any part of the works required in the erection of the New Wesleyan Schools, Haslingden. Drawings or specifications with Hayley and Son, architects, 45, Cross-street, Manchester, and at the vestry of the old chapel, Haslingden, from the 30th inst. till the Saturday following. Quantities from the architects on and after the 28th inst., or will be forwarded, post free, on the receipt of thirty postage-stamps; and sealed tenders are to be delivered to them on or before January 6th.

FOUNDATIONS, &c.

MIDLAND RAILWAY.—For the construction of the foundations, basement walls, and cellars under the Company's warehouse, to be erected at the St. Pancras Goods Station, London. Copies of the quantities may be obtained at the Engineer's office, Derby Station. The drawings and specifications may be seen at the above office, from the 1st to the 6th January; and at the Company's temporary office, Elm-ledge, King's-road, St. Pancras,

from the 7th to the 12th January (inclusive.) Sealed tenders, in one amount, to be forwarded to the secretary of the Way and Works Committee, Derby Station, not later than 10 a.m. on 14th January.

WAREHOUSE.

LEEDS.—For the erection of a warehouse in Park-place, Leeds. Drawings, &c., with T. Ambler, architect, 10, Park-row, Leeds, from the 13th to the 21st January. Tenders to be sent to Mr. Ambler not later than 12 a.m. on the 23rd January.

ALTERATIONS, &c.

KENT.—For certain alterations and repairs, additional buildings, stabling, and other works to be done at the Head Quarters Station of the Kent County Constabulary, Wren's Cross, Maidstone. Plans, &c., at the office of Mr. Martin Bulmer, County Surveyor, Westborough, Maidstone. Sealed tenders, endorsed, "Tender for Works at Wren's Cross," are to be delivered at the county surveyor's office, by four o'clock p.m. on the 6th January next; and persons tendering are to be in attendance at the Courts of Justice, Maidstone, at half-past 12 o'clock on the 7th January.

FARM BUILDINGS.

DEVON.—For the erection of a new farm house, at Halscombe, near Ide. Plans, &c., at Messrs. Daw and Son's offices, solicitors, Bedford-circus, Exeter, where tenders must be forwarded by the 1st of February.

MILITARY WORKS.

CORK.—For works of defence, including bomb-proof barracks, at Camden Fort, Cork Harbor, &c. Time for tenders extended to January 22nd.

FLEETWOOD.—For tenders, in detail, for the erection of a two-gun wooden battery, at Fleetwood. Plans, &c., on application at the Coastguard Watch-house, Fleetwood. Further particulars to be obtained from Commander Chapman, R.N., Morecambe, to whom all correspondence is to be addressed, and with whom tenders are to be lodged by Saturday, January 11th.

PATENT SLIP.

HULL.—For a patent slip, not less in size and capacity than the largest of the existing slips at Kingston-upon-Hull, for the use of vessels frequenting the port, for the directors of the Dock Company. A statement of the conditions may be obtained upon application to the secretary, W. H. Hufham. Accompanying these conditions is a form of tender, upon which only tenders will be received. Tenders must be sent in on or before 12 noon, of the 18th January, addressed to the secretary.

GASHOLDER, &c.

STALYBRIDGE.—For making and fixing a telescope gasholder (100 feet diameter), with the necessary columns, girders, &c., at the works of the Stalybridge Gas Company, Micklehurst, near Stalybridge. Plans, &c., at the Gas Office, Stalybridge. Sealed tenders, endorsed "Tender for gasholder," and addressed to the chairman of the directors of the Gas Company, Stalybridge, to be sent in not later than the 11th January.

AUSTRALIA.—For cast-iron pipes, bends, branches, syphons, &c., for the Adelaide Gas Company, South Australia. Specifications, at the office of Messrs. Filby and Co., 63, Fenchurch-street, E.C., London, between 12 and 2. All communications, by letter, to be addressed to the Company's agent, Mr. J. C. Lanyon, Jun., to care of Messrs. Filby and Co. Tenders to 10th January.

FUEL AND GAS FROM WATER.—Arrangements are being made at the Leeds Gas Works for the manufacture of gas from water, much on the principle carried out some years ago by Mr. White, in Manchester. Steam is decomposed in passing over incandescent coke or charcoal, and the liberated hydrogen is afterwards carburetted by being passed through resinous or other carbonising matter. The *London Review* says attention has recently been drawn to the use of water as a fuel. The employment of its vapor has already been utilised in metallurgy as an agent of oxidation in the roasting of certain minerals, particularly to facilitate the separation of arsenic and antimony compounds in metallic sulphurets. For several years attempts have been made to employ the calorific power of the hydrogen contained in water; and it is the same line of invention that Messrs. Maire and Voller have sought to utilise it as a combustible in industrial furnaces, and particularly in metallurgical operations. Water, fed in a regulated and intermittent manner into a hot fire, is decomposed into oxygen and hydrogen. The former gas unites instantly with the carbon, and the hydrogen, burning in presence of atmospheric air, produces a considerable heat in addition to that of the principal combustible. These results, then, a considerable augmentation of calorific without any addition of combustible, and, consequently, a more rapid fusion of metals and materials, and an economy of fuel which the authors of the process state varies from 40 to 50 per cent. Experiments and calculations have demonstrated that the heat absorbed by the decomposition of water is less than that furnished by the combustion of the gaseous products of the decomposed water.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism,"—*Morning Post*. Gold watches 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enables persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

J. W. BENSON, 33 and 34, Ludgate-hill, 46 and 47, Cornhill, London, E.C. Established 1749.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications. WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favor us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

Jno. M. (Waterloo-place).—The result was not sent to us, or it would have been inserted in its proper place.

A. BUILDER (Yorkshire).—You have not stated the case very clearly; but we should say that no charge should be made against you. Is there no agreement?

R. L. B.—1. No reply has yet appeared. 2. We shall be glad to look at any matters you may wish to send us.

J. C. (Macclesfield).—Under consideration; probably in a few weeks.

K.—We cannot advise.

J. E. C.—Upon the statement, we think D. S. W. has no right to deduct the cost of alterations from the balance due.

AN INHABITANT OF THE NEIGHBOURHOOD.—We agree with you to some extent; but what proof have you that the "few feet" were originally stolen from the footpath?

G. V. B.—Index and title page will be ready shortly.

G. P.—Below our mark.

O. S. B.—In our next.

M. (Cambridge).—Received; too late for insertion this week.

E. J.—Should send further particulars.

W. R.—Not until the term of apprenticeship has expired.

A. SUBSCRIBER.—Yes, if suitable; let us see promised photograph.

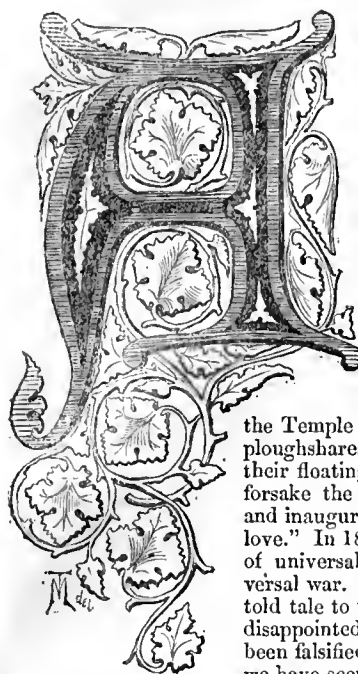
Mr. JOHN.—Shall appear.

A. Z.—In type.

B.—a.—Before long.

*All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old Bowell-court, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 18 to 21, Old Bowell-court.

THE YEAR'S PROGRESS.



ALMOST the first thing that will strike the reader, on his glancing backwards over the art-history of the year just ended, will be the remarkable and painful contrast which it presents with its predecessor, 1851. Then we carried to a pre-eminently successful issue a great experiment—the International Exhibition. We were in the fourth decennium of uninterrupted peace in Europe. We had seen a gathering of all nations in bloodless contests and in useful rivalry. We boasted that we had taught the nations of the earth their true interests, so that thenceforth they would close

the Temple of Janus, beat their swords into ploughshares, disband their armies, transform their floating citadels into merchant clippers, forsake the art of war for the arts of peace, and inaugurate an era of “universal brotherly love.” In 1851 we believed in the maintenance of universal peace—to-day we fear a universal war. It would be to repeat a thrice-told tale to relate how these hopes have been disappointed—how all these predictions have been falsified. In the short space of eight years we have seen two European wars, two great

European empires prostrate in the dust, and driven to revolution or reform, not by moral suasion, but *vi et armis*. A nationality has been raised from the tomb where it had slumbered for centuries, and a sixth Great Power called into existence by war. We have seen English dominion in the East threatened by the rebellion of its armed defenders, which ended in consolidating our rule, and made our Queen Empress of India. The swords of England and France have opened China to the world's commerce, and we are now fated to behold a heart-rending contest between two branches of the English family, while for weeks past we trembled lest, with all our precaution, we should be drawn into the contest. On the other hand, and notwithstanding these wars, we have witnessed a development of material prosperity among nations which the most enthusiastic believer in human perfectibility would not have ventured to predicate ten years ago. We have added more than a million and half to the resident population of the three kingdoms, besides upwards of two millions who have left us—stimulated to emigrate by the gold discoveries—for new worlds, there to add to the foundations of new English empires. There must be nearly four millions of our race more than there were ten years since, and our trade has more than doubled in that period, for our exports have risen from seventy millions in 1851 to £165,670,653 last year.

The decennium just closed has been a truly epic one; it has been an heroic period. Its annals will read more like the books of an Homeric poem than like the chapters of matter-of-fact history; for the landmarks of nations have been changed, new empires planted, and the destinies of races altered. Yet, while these great things were doing, and have been done, no poet, sculptor, painter, or architect has been inspired to celebrate them in verse or by the arts of design. The arts of peace have not kept pace with the arts of war; or, perhaps, we should say, they have entered on divergent paths, never to associate again. Few will regret the divorce, if war be left to its brutal and bloody realities, and art reserve her idealising and glorifying powers for those achievements which conduce to the happiness instead of to the destruction of men.

If we are right in surmising that neither Calliope nor her sister Graphia will henceforth make the deeds of Mars the themes of their works—at least, not in England—it must not be forgotten that the change of direction in the workings of art is due in some measure to one whose loss we still mourn. There is no doubt that, with our national instincts, wars dictated by patriotism or undertaken for the defence of honor and freedom, will always command our sympathies and support. But the public mind happily distinguishes between wars of this nature and those which spring from lust of conquest, a thirst for glory, or a desire to realise ideas. So far as he was permitted, the Prince Consort led public opinion into this new channel. Without ceasing to take a lively interest in our national defences, he never condescended to play at soldiers, but directed the energies of his mind to the advancement of art and to the promotion of social happiness. On the last occasion of his appearing in public, he asserted his belief that “whatever tends to foster a taste for intellectual

enjoyment must also exercise an important influence on national progress and national prosperity.” If anything could increase our regret at the irreparable loss recently sustained by the nation it would be that it should have occurred before his Royal Highness had had occasion to display an interest in the advancement of architecture as active as that which he displayed in the progress of the sister arts, and of which premonitory signs were exhibited in the inauguration of the Industrial Museum at Edinburgh; for whatever the progress of our art may have been during the last twelve months, never was the want of a controlling spirit and of an impartial guide more felt than now. On all sides the condition of the profession is admitted to be unsatisfactory.

Besides the great question of æsthetics, which divides it into two parties, petty personal jealousies and individual rivalries spring to the surface, and set the profession in an unfavorable light before the world. Since the time of poor Haydon the public has not been vexed by quarrels and bickerings between painters or between sculptors. Even literary men, forgetting the traditional example of the “Quarrels of authors,” have learned the wisdom of the adage *que l'on doit laver son linge sal chez soi*. Architects, alone, seem incapable of composing their differences, and of refraining from unfriendly criticism upon the works of their brethren. The election of a president to the Institute was made the battle-field between Classicists and Gothicians. It seems to have been accepted by mutual consent as an arena for a trial of strength between the two parties; Mr. Tite was proposed by the Council, and was accepted as the Champion of Classic architecture. Mr. Beresford-Hope, was the champion of the Gothicians. The two gentlemen representing extreme views in architecture were set up in opposition, and Mr. Tite elected by a majority of fourteen; the numbers being sixty-five to fifty-one and but little more than half the number of electors voting. If the result be claimed as a triumph for the Classicists, it shows the Gothicians to be in greater force than was perhaps thought, and may encourage them to discipline their numbers and bring up their reserves next time. It is no more than justice to the President to state that he has exhibited moderation in his uses of victory.

It is, perhaps, to the division of the profession on æsthetic principles that we owe the non-settlement of the diploma question. Whether diplomas will ever be established, or whether, if established, they will ever be valued by the public beyond the price of waste paper, are matters into which we need not go, except to remark in passing that the attempt to make civil engineering a close profession by means of Putney College and its diplomas, signally failed without apparent detriment to the public. But there is no doubt that the question ought to be settled and that speedily.

According to the statements of advocates of diplomas, the profession is jeopardised by the intrusion of unqualified practitioners, the social standing of architects is lowered, and the public placed at the mercy of incompetent persons; if so, all the more urgent is it for the Institute to decide on the institution of examinations and diplomas, or what other fences may be deemed desirable to exclude incompetency; for, by postponing their decision, it is quite possible the whole scheme may be defeated.

The Copyright Bill introduced by Government at the early part of last session might have been made conducive to the interests of architects, if the profession had been united and properly represented. It may give pain to say so, but it is, nevertheless, true, that neither the Institute nor its Council sufficiently represents the profession. They cannot be fully entrusted, under the present system of organisation, with the care of architectural interests. This has led to a proposition for the amalgamation of provincial societies with the Institute and Association, but that, like the diploma question, made but little progress towards solution. That architects should have a bond of union, a platform common to all, and an organisation which will enable them to speak as one man on occasions where they are concerned, most people will admit. The only difference of opinion is, as to how it is to be effected. Amalgamation is beset with difficulties. There are so many individual susceptibilities that would have to be consulted, and such a variety of interests to be safeguarded, that we look on the task as one of the greatest difficulty.

In appealing to the Institute to investigate the causes of the decay of stone employed in the construction of the New Palace at Westminster, and to examine the remedies suggested by Mr. Ransome and others, the First Commissioner of Public Works and Buildings would appear to have forgotten that in the provincial Architectural Associations there is available an extended knowledge of building stones, and a practical acquaintance with their use. There could be no harm, and it would have been no more than a well merited compliment, to have asked all the Architectural Societies of the three kingdoms to have examined the subject, for some new light might then have been thrown upon it. The committee appointed, by the Institute and in which leading engineers, chemists, and geologists were associated,

undoubtedly did their best, and they are hardly to be blamed if they left the question where they found it. They have added nothing to our knowledge of the causes of decay, and they were "decidedly of opinion that the discovery of a proper mode of treating stones in a state of decay had not yet been made," and that there is no evidence that "the decay has been prevented by any of the processes yet applied"—conclusions scarcely worth the trouble they cost to arrive at.

We must defer some additional remarks until next week.

MONUMENT TO THE PRINCE CONSORT.

NOTHING could be more natural, or could better testify to the widespread feelings of respect for the Prince Consort, than the proposals recently made in various quarters to erect a monument to his memory. That an enduring memorial of his worth, and evidence of the national esteem in which he is held should be erected, we are all agreed; but there is some difference of opinion respecting what should be the character of the memorial. Ultra enthusiasts of every hue trot out their respective hobbies with more apparent desire to outstrip competitors than is befitting the melancholy occasion. One wishes national subscriptions to be made to flow into the exchequer of the South Kensington Museum, in order that it may thereby be rendered independent of Parliamentary grants, and be erected into an "Albert Institution for the Art Education of the People." Others put forward the claims of philanthropic establishments, hospitals for every variety of disease, reformatories, and ragged schools; while, in the columns of a daily journal, the matter is settled for us off-hand, and an obelisk, we are told, is the most artistic and appropriate monument that can be suggested. It would have been preferable if these amiable enthusiasts had remained silent until after the first burst of national grief had subsided, or if they had ridden their hobbies in private; but as they have, with reprehensible indelicacy, thrust themselves forward, and, in fact, sought to pre-occupy the ground with their pet schemes respectively, it becomes a painful duty for journalists to dispel delusions and set the matter in its true light before the public.

The nation will not allow the loss it still grieves over, to be made the opportunity for gain by philanthropists or educationalists. There is something so revolting and unfeeling in propositions of this nature, that one might well be surprised at their having been made, if it were not well known that enthusiasts are callous, where the feelings of others are concerned, and totally oblivious of the decencies of life, when it is a question of bringing out their particular hobby. Philanthropists should carefully avoid doing aught that might tend to their being confounded in popular opinion with selfish traders on woe; for it is difficult to draw the line of distinction between men who seek to turn a reverence for the dead into a means of gratifying greed for gain, or personal vanity. In both cases self is the mainspring. Although there can be no harm in connecting charitable institutions with the memory of the dead—if their supporters desire it—to act in the manner proposed, would be to charge the dead with the work of the living, and the "lamp of sacrifice," would be transformed into one of utility. In founding and supporting institutions for the cure of disease, ignorance, and crime, society does a work which if charitable, is also economic, and which is also in atonement for other duties neglected. Charity is a virtue the practice whereof is enjoined by divine authority. It is a feeble acknowledgment to the Giver of all Good of gratitude for his mercies. It is one of the means whereby the rich may work out their own salvation, and is, therefore, a double duty incumbent upon all who have the wherewithal to give.

The satisfactory progress made within the last half-century in the diminution of the rates of mortality, poverty, ignorance, and crime, is conclusive evidence that they are not the normal condition of certain classes of the community. Paupers and criminals, and disease are due to the *laches* of society. Where Dives diverts his talent to the gratification of his sensual desires, and allows his poorer brother to dwell in dirt, in rebellion against the principles of sanitary science, and without pure air, light, and water, then will Lazarus, loathsome to behold from disease, lie at his gate and beg. The duties of property are as clear and positive as are its rights. The Registrar-General's returns show that their fulfilment will reduce the rate of mortality, prolong the average duration of life, and diminish the sick rate. If property does not fulfil its duties it forfeits its right, and if it supports hospitals it does reparation very inadequate to atone for its previous neglect. Education is another of the duties of society, which cannot be neglected without loss and evil resulting. The present generation is bound to instruct the rising generation—parents to teach their offspring to know good from evil—and the community, in obedience to the dictates of self-interest, to provide the means for all species of instruction. Where this is not done there is a neglect of duty, and charitable contributions to schools or colleges are insufficient reparation. If English society neglects these duties it must not charge the memory of the dead with contributing to make reparation, as far as practicable, nor with bearing the burden of atonement. We must bear the load ourselves; we are wealthy enough to contribute all which, under the disguise of charity, may be asked from us to repair our neglect, and we can also afford to transmit to posterity a monumental record of the services to ourselves rendered by the Prince Consort, of our gratitude therefore, and of our admiration of his virtues.

For these reasons we conclude against a combination of utility, profit, and vicarious discharge of duties in any shape or manner as a public monument to the Prince. We object to the national tribute being devoted to establish an educational institute, model farms, hospitals, reformatories,

refuges, or museums *in memoriam*. We submit that art, or the sister arts, working by the lamp of sacrifice, should be enabled to erect a monument as enduring as it could be made, which should proclaim to future generations of men, by the eloquence of artistic forms, the national sentiment of the present day.

There is no objection to any class of philanthropists identifying the work they have in hand with the memory of the Prince Consort. By all means let them do so in their character as a class, and as an addition to the national memorial. Consequently, it would be a cause for much regret, if anything we have stated should be construed into disapproval of Mr. Cole's suggestions for carrying out the scheme devised by the Prince for establishing an industrial university. For the chief characteristic of the Prince was his sympathy with labor, which prompted his unremitting efforts to raise it in general estimation. But the industrial university would be for the advantage of the community. Its purpose is to augment our industrial superiority with a view to enlarge and consolidate our commerce, and in carrying it out we should not so much raise a monument to the dead, as we should lay the foundations of future manufacturing prosperity. By all means, therefore, let those who have an interest in the question, and the department charged with public education realise the Prince Consort's scheme. But let them guard themselves against the idea that by so doing they are erecting a monument to his memory. For disheartening as it may be to confess it, it is nevertheless true, that charitable endowments do not perpetuate the memory of their founders among society at large. How many pass by the Charter-house who never heard of Sutton? and it is the same with most of the noblest charities, while many have been mismanaged or improved, until they have fallen into oblivion. So true is this that Mr. Cole does not advocate the industrial university, except as supplementary to "other memorials of a monumental character."

Agreed upon this point, we are brought to consider the proposition for erecting a monument in the shape of an obelisk, to commemorate the Prince Consort's connexion with the International Exhibition of 1851. But the Prince did other things beside organise the Exhibition, which are quite as noteworthy, and equally deserving of commemoration. It is not to a particular action of his life we desire to do homage, but to his memory, taking him for all in all. Further, the proposed monument would be a work of supererogation; for, close to the site of the 1851 Exhibition—in the gardens of the Horticultural Society—is to be a public memorial of the Exhibition, surmounted by a statue of the Prince Consort—given by his son—in lieu of the statue of the Queen. We do not require duplicate memorials erected in the same locality, but one national monument in the metropolis of the empire, which shall be so intelligible in its character as to be comprehensible to all. With respect to the artistic character of the monument, which it has been endeavored to predetermine, a very great deal may be said against an obelisk as being the least suitable shape that could be adopted. It may not be so objectionable as a detached column, which is an isolated architectural feature set up without cause or purpose; but it is not an artistic form any more than a common milestone. Obelisks in Egypt have a fine effect, but that is due to the physical and atmospheric character of the country. A vast plain bounded on all sides by the horizon with scarcely an undulation, and whatever structures may be near not rising more than a few feet above the level of the soil admits of an obelisk being seen to every advantage, towering aloft in solitary grandeur, in a clear and luminous atmosphere, and with the horizon for a background. Here we have none of the conditions that conduce to the advantageous appearance of an obelisk, but many that militate against it. Sir Francis Chantrey pointed out many years ago the absurdity of erecting columns, and therefore obelisks, in London or other English towns, from the fact that they have to compete with and are lost among tall chimneys; and he spoke of Rome, where there are no chimney-shafts, as a suitable locality for monumental shafts. A column, and we have three of them in London, rising above the level of surrounded structures, surmounting by a statue or ornamental finial is more easily distinguished than an obelisk, which, so far regards as its artistic outline would be very inferior to many chimney-shafts; while, instead of the horizon for background, and clear atmosphere of the East, an obelisk in London would be reared against a background of trees, or dingy houses, and in an atmosphere of fog.

There is, of course, a precedent for employing obelisks as monuments. Sanehoniaton, wrote that the Phenicians and Egyptians consecrated columns to those who benefited mankind, and to the elements; but that may be questioned. Their real use was to serve as "Books of History." An obelisk without inscriptions would be purposeless and an absurdity. Yet who would venture to propose to incise the faces of an obelisk in London with inscriptions? Letters would be invisible, and hieroglyphics unintelligible. "But," it may be answered, "the story would be told on the base." In that case the obelisk would be a superfluity, for the base would be the monument, and what might be above would be a useless ornament, and therefore in violation of one of the first canons of art. The minds of such as adopt mere size as the chief architectural standard of beauty are struck by reference to the St. Petersburg monolith, which is 84 feet long, and, with the base, rises 154 feet high. We could certainly obtain quite as respectable a monolith from the granite quarries of this country, for Mr. Robert Hunt told the Society of Arts in 1859 that he was quite satisfied a monolith 90 feet long could be quarried here, and Mr. Bellamy stated on the same occasion that Mr. Freeman had reported that he could supply from Cornwall a monolith 120 feet long, by 14 feet on the sides. But, however much the dimensions of known obelisks might be exceeded, the result would not be a work of art.

We submit that a monument to the memory of one so universally

esteemed and regretted should be a work of fine art—the highest that can be obtained, and that it should exhibit that combination of the sisters which Mr. John Bell has so eloquently advocated in these pages. We shall not now obtrude suggestions as to what the character of the monument should be, although we may venture to express the hope that architecture will not, as hitherto, be placed under ban and interdict, but may be permitted to provide a home for the monumental sculpture. It would, perhaps, prevent much ultimate disappointment, and satisfy the longing of the nation to pay the highest honor that can be offered, if public competition were invited as the surest mode of obtaining the best design. In that case it might be desirable to depart from the ordinary course, and invite those who wished to compete to send in their names. From this list a committee would select half-a-dozen of those who appeared to be most competent to supply designs, for which ample remuneration would be made, and the author of the best employed to carry it into execution.

THEATRICAL SCENERY.

MR. W. CALCOTT'S "Transformation Scene" at Covent-garden Theatre, when first presented to the public, was much more complicated than it now appears; it is, however, still complete in itself, and very effective. At the commencement the stage is thrown into darkness. As the first gauze rises an indistinct view of a cavern is obtained; gradually some shells on banks of dead gold, constituting the foreground of the picture, become visible, after which they present a more positive appearance by the dark blue of the water near the foreground. A second gauze is now raised, and shows an extensive cavern, painted in gradations of the warm, dull color in the front, also another tint of the water. A third, an intervening medium, is removed, and the scene is enriched with a rising bank of green and gold between the two pieces of water, at each end of which an arch gradually ascends towards the roof, the cavern bearing fossils in gold; a brilliant light being thrown upon them the splendour of the scene is greatly increased. Two large shells afterwards appear, bearing a female figure in each of them very elegantly dressed, and illumined by a most dazzling light. The general effect is now a contrast of vivid green, among which is distributed a large portion of dead gold. In the middle distance, and the centre of the stage, a large mass of plant of fern-like leaves slowly ascends, becoming gradually brighter than the shells at the sides; and now the plan of the scene becomes more generally developed by all the objects being reflected in sheets of looking-glass lying in the foreground, surrounded by the bank and shells already described, the sheets of looking-glass being intended to represent tranquil water. When the centre object has risen to the intended height, the front of it slowly opens, and descends until it forms part of the scenery below. A female figure has been enclosed in this ornament, and the descending form containing looking-glass, adds the reflection of her figure to the rest of the scene. The brilliancy of the light is now diminished in gradations on the surrounding objects, and all the most vivid rays are focussed upon the centre figure. The white gauze dress of this figure, from its local color and its textural quality, being incapable of reflecting bright light, forms an excellent contrast to the vivid green, brilliantly illumined, by which she is surrounded, and which is at the same time, both delicately and effectively opposed by a pink scarf thrown across the shoulder. The pink scarf forms the complementary color to the blue, green, and yellow of which the rest of the scene is composed, the whole of which is completed by some naiads appearing as floating on the water, while the roof of the cavern over the foreground is composed of dull green fern-leaves, branches and portions of the cavern itself. After the audience have had time to enjoy the general effect, the whole is changed, by green light being turned on, and it gives both a cool and elegant aspect to the design. A red light then mingles its rays with the blue, which produces a striking contrast between the front and the back of the scene, the red light ultimately assumes the ascendancy, and the curtain falls upon this last effective change.

The scene is highly creditable both to the artist and the management.

ART DESIGN AT THE INTERNATIONAL EXHIBITION.—The following minute of the Art Designs Committee of the International Exhibition of 1862 has been forwarded for publication: "Her Majesty's Commissioners for the Exhibition, being desirous of exhibiting the progress of art designs for manufactures, would be glad to receive contributions from possessors of drawings and models by British artists executed within the century 1762-1862. Artists, designers, and manufacturers in general are hereby invited to send works, suitably framed and glazed, or if of large size on strainers, properly prepared for hanging. Designs in all departments of art industry capable of reproduction are admissible in this class. Designs for glass and ceramic wares, precious and other metals, furniture and carving, plastic decorations, and other objects in relief; also designs for textile fabrics, paper-hangings, mural decorations, tiles, mosaics, inlays, stained, painted, and decorated glass, &c. Assistance from the possessors of drawings and models by such artists as Chambers, Adams, Soane, Stothard, Flaxman, Pitts, Pugin, Wyon, and others, is especially desired; and the committee trusts that the holders of such works will communicate with the secretary as early as convenient. Illuminations of an original character will be admitted into this department. All works must be delivered for the inspection of the committee, on or before the 31st of March, at the South Kensington Museum (office entrance).

THE INTERNATIONAL EXHIBITION.—Mr. F. R. Sandford, the Secretary of the Commissioners of the International Exhibition, authoritatively contradicts the statement, which has been circulated, that her Majesty will open the Great Exhibition in person.

NOTES FROM PARIS.

A CORRESPONDENT, "C. H. D.," notes, among other matters, that all that block of the *cité* bounded by the street of the same name, the Boulevard de Sevastopol, the Quai Neuf du Marché Neuf, and the Rue Constantine, is in course of demolition. Those who wish to give a parting glance to this interesting portion of old Paris have no time to lose, for most of the expropriated buildings have been abandoned, given up to the contractor, or shut up. This ground, to be the site of new barracks, was at one time the industrial centre of the capital; there were three churches there. St. Germain-le-Vieux, in the Rue de la Calandre, fronting the Rue aux Fèvres; St. Pierre des Fossés, where stood subsequently the Convent des Barnabites, of celebrated memory; and St. Martial, situated at the end of the impasse de St. Eloi.

This last church, demolished in 1722, gave way to a house which, up to the revolution, served as a presbytery for the curate of Saint Pierre-des-Arles, a neighbouring parish. It still exists. The Rue de la Calandre which we now find so narrow and cramped up, was at one time the Bond-street of Paris. Every cortège from the Palace to Notre-Dame passed through it. In the group of buildings to be cleared away figures the Rue des Cargaisons, barred up since 1825; in 1700 it was known as "La Rue de la Femme ecartelée," its width varies from 1m. 10c. to 1m. 76c. At one extremity of this street opens the celebrated Rue aux-Fèvres, described in the "Mysteries of Paris;" in its present state none of the *tapis francs* or *coupe-gorges* exist, as it had many years ago undergone a transformation; the noisy tavern of the *Lapin-Blanc* was transformed into a fantastic gallery or saloon, if we can believe the following lines inscribed on the walls outside:—

Pour nu musée n'allez pas à Versailles.
Le Lapin-Blanc vous offre ses murailles,
Couvertes de rimailles,
Et de caricatures,
Qui railles.

The poetaster was evidently not ashamed to sacrifice the grammar of his country to the exigencies of rhyme.

The exterior boulevards of Paris proceed actively; already they are opened out from Montmartre to La Chapelle, and continue to be pushed forward from the ancient Barrière of Clichy as far as that of Monceau. They are expected to be completed very shortly. These "circular" boulevards are really beneficial in a sanitary point of view, as, when they are well planted, they will become veritable magazines of oxygen, yielding forth their daily supply.

In the *Moniteur*, about three years ago, there was an account of some very interesting experiments made by M. Nadar, the photographer, of Paris, upon his first ideas of acrostatic photography applied to planispheric plans, whether for civil or strategical purposes. Long before the American journals began to speak of the acrostatic telegraphic apparatus worked by electricity the above artist had completed two machines, one working up in a balloon at a lofty altitude, and another at the surface of the earth, the communication being, of course, instantaneous.

The Roman baths of Périgueux, discovered some four years ago, are still an object of attraction to visitors. Situated in the plains of Campagnac, perhaps they are the first remains of importance which have been found in so complete a state. Paris possesses the Julian Baths, &c.; but, up to the present time, no one has had an opportunity of examining the internal dispositions of a vast establishment of Roman baths with details such as are revealed by the excavations at Périgueux. We have no positive information as to the precise epoch of their construction, yet it may be presumed that they are of Roman origin. In support of this an altar of early construction bears the following inscription, in characters of the second century:—

In order to accomplish a vow, Marcus Pompeius, priest of the god Mars, freeman by birth, of the tribe of Quirina, son of the sacred priest Caius Pompeius, consecrated this altar to . . . and to . . . Apollo, after having repaired at his expense the temple of the tutelar goddess and the public baths, which had fallen into a state of dilapidation.

The above altar is now in the ruins of the Château de Beaufort, belonging to the Commandant of Beaufort, who has collected all the objects discovered, and who shows them to visitors with the utmost courtesy.

RAILWAY TRAVELLING.—Mr. William Hawes has addressed the following letter to the *Society of Arts' Journal*:—"Mr. Baker, in his paper on this subject, assumed that constant daily railway travelling produced injurious effects on the health of railway travellers. He also suggested that the injurious effect was less in second-class carriages than in the first-class, and less in third than in second. I will not now stop to inquire whether his view of the cause of the result he affirms be correct, but I hope you will allow me to request that our *Journal* may be used as the means through which facts on this important subject may be collected, and, when collected, compared and analysed for the benefit of the public. The first step in such an inquiry is, to collect facts, and this can only be done efficiently if a large number of railway travellers will be good enough to answer, with care, a series of questions compiled with a view to elicit information on this very interesting question. With your permission I will submit a series of questions to the readers of the *Journal*, and if those whose experience enables them to do so will be good enough to forward their replies to the office of the Society, addressed either to the secretary or to me, I will undertake to publish the results in the *Journal*, as soon as my time will permit:—

1. Do you travel daily, or nearly so, by railway?
2. How many miles each day?
3. State the hours of travelling and of your meals?
4. For how long a period have you been travelling regularly?
5. Which class do you travel by?
6. Have you found any inconvenience from this regular railway travelling, and, if so, of what nature?
7. Do you sleep while travelling, and, if so, does sleep in a carriage refresh you—as, for instance, in a chair?
8. Do you read, or otherwise employ your time during your journey, or did you do so at one time, and have to give it up?"

ORIEL WINDOW OF THE PARSONAGE HOUSE OF ST. SEBALD'S, NUREMBERG.

AT the north-west corner of the square in which stands the fine church of St. Sebald's, Nuremberg, is the Parsonage-house, the remarkable feature of which is the very beautiful oriel window represented in our engraving.

Famed, as Nuremberg is, for its ecclesiastical and domestic buildings (in the latter to such an extent that an ancient author—Æneas Sylvius—declares that “a simple citizen was better lodged than the King of Scotland”), this oriel window holds a foremost place for the beauty of its design, and its bold and highly sculptured detail. It was probably put up during the reign of Charles IV., about 1361.

The five bas-reliefs represent incidents from the Bible—as the Adoration of the Magi, &c.

The painted windows are said to be the work of Hirschvögel, a famous artisan of the city, who first established there the art of enamelling pottery, in 1507.

The rest of the house to which it is attached is plain enough; it was once the residence of Melchior Pfäuzing, author of the poem of “Thever-Jank.” He was a canon of the church of St. Sebald.

SCOTLAND.

Dumfries and Maxwelltown Mechanics' Institute.—The new hall of this Institute, in Irish-street, Dumfries, was opened on the 12th ult. The style is Gothic, of the Early English period. The front elevation to Irish-street is 62 feet long—its leading feature consisting of three large entrance doors with pointed arches, and a circular tracery window under the main gable. The arches are built of white and red stones alternately. The height from the ground to the apex of the gable is 46 feet. The internal arrangements of the building are simple. The three front entrance doors open into a lobby 30 feet long, from which access is had to the ground floor of the hall. At the one end of the lobby is the stair up to the gallery, at the other end is an ante-room for cloaks, &c. The total width of the ground floor of the hall is 58 feet, and its length is 56 feet (exclusive of the platform, which is at the end opposite the front doors, and is 33 feet long by 11 feet wide). The gallery is placed opposite the platform, and extends over the entrance lobby; it is 23 feet deep, and 33 feet wide, and gives the total length of 76 feet from the back of the platform to the back of the gallery. The roof of the building is in three compartments, dividing the interior into a central nave and aisles on each side. The nave rises above the side aisles to the height of 34 feet, and is constructed of eight laminated wood ribs, in the form of pointed arches, springing from iron columns, which give a vaulted appearance to the interior. The ribs of the nave are carried down the lower roofs of the side aisles, and terminate on stone corbels in the walls. The roof of the nave, rising above that of the aisles, allows the light to be introduced through a range of clerestory windows on each side. The ceilings are plastered and formed into panels and geometric figures by intersecting mouldings. The ribs, &c., are grained oak, and are finished on the spandrels with polychromed trefoils and shields, which are filled in with the initials of great men of the past and present day. The plaster panels and mouldings are tinted variously to harmonise with the wood-work. The gallery front consists of an open ornamented iron railing, bronzed, and lined behind with crimson cloth. At night the hall is lighted with ornamented brackets, hung from the beams of the gallery and nave. At present it is seated for 1,000 people; but if occasion requires, it can be arranged to hold 150 more. The cost of the building is about £1,300. The design was furnished by Mr. Fraser, architect, Dumfries. The contractors were—for the mason work, Messrs. Crackstone and Son; for the joiner work, Mr. Mein; for the plaster work, Mr. Fraser; and the slater work, Mr. Bridges. Mr. Coltart had the painting, and Mr. Aitken the glazing.

Sick Children's Hospital, Edinburgh.—The plans for the alterations proposed on the house at Meadowside, prepared by Mr. David McGibbon, architect, have been approved by the directors and medical committee. According to these plans, in the main building there will be two large wards, each 56 feet 9 inches by 15 feet 4 inches, capable of containing together about 24 patients. In a separate wing to be built to the west of the present house, there will be two wards, each 25 feet by 22 feet, and together suited for 12 patients. These wards are intended for fever patients, and are to be placed so as to form a separate department entirely shut off from the rest of the establishment. There will also be one or two small wards for special cases, giving in all about forty beds. Each of these departments is to be complete in itself, with separate bath-rooms, &c. The ventilation has also been particularly considered, and the plan recommended by Miss Nightingale will be adopted. The windows of the wards being chiefly to the south, will have the benefit of a sunny and cheerful exposure. The entrance is to be towards the south, with a large hall and a wide new staircase. Next to the entrance on the ground floor there will be a large day-room, in which the children who are sufficiently recovered will be able to play when the weather does not admit of their being out of doors. The grounds round the building extend to about one acre. The alterations are to be begun in May next, and are estimated to cost, with the purchase-money, about £4,500.

New Town Hall, Rutherglen.—The buildings of the new Town Hall are in the main street, immediately to the east of the parish churchyard. They have a frontage of 61 feet to the street, and a depth of 79 feet 6 inches. The ground floor is occupied by a spacious entrance-hall and a lofty staircase, which conduct to the Town Hall on the upper floor, and to a court hall in the rear of the buildings, the front portion of the ground floor being arranged for two double shops. In the treatment of these shop-fronts the architect has endeavoured to overcome the injurious effect which so often attends the introduction of shops into a public building. The public hall measures 75 feet by 40 feet inside; it extends over the shops and lower hall, and is lighted on the west side by five large four-light mullioned and transomed windows, and on the south by a large oriel of six lights. The ceiling of this hall is composed wholly of dressed timbers, stained and varnished. It is semicircular in section, divided into compartments by arched, coupled beams, springing from impost shafts, with foliated capitals, attached to the side walls and arranged in couples under the arched beams. The exterior of the building is in the Scottish baronial style, quaintly varied and ornamental in its details. The shop windows have round, arched heads, with string mouldings

encircling them, and indicating the division of the floors. The centre of the front is occupied by the large oriel, which seems almost to fill the end of the hall. It is projected on elaborate corbelling from between the arches of the ground floor, and is panelled and ornamented with escutcheons and armorial devices. The angles of the building are crowned with bartizan turrets, with high peaked conical roofs. A high pitched gable occupies the centre of the front over the oriel, in the centre of which is a panel carved with the armorial bearings of the burgh, and on either haunch of this gable a carved lion and unicorn is placed, the apex being finished with a pile of armor, bearing the Scottish crown. The other panels in the front are carved with the armorial bearings of England and Scotland, and with ornamental devices displaying the charters of the burgh, granted by David I., 1136; William I., 1189; Robert I., 1324, and James V., 1542.

The entrance door is at the east side of the front, under the tower, and forms a prominent feature of the elevation, from its size, the character of its arch and jamb mouldings, and its position under the plain solid mass of the tower. The height of the building from pavement to apex of centre gable is 72 feet, the entire height of the tower is 110 feet. The tower is very plain in the lower portion, above the doorway, but becomes broken in outline at the top; the angles are terminated with bartizan turrets with domed roofs, the walls between being terminated in crenelated gables, with clock dial-plates in each side. The dials of the clock, we believe, are so designed that the hands and figures will appear white at night on a dark dial, and the reverse during the day. Mr. Muirhead, of Glasgow, is the maker. The contractors are,—for the mason work, Mr. Lawrie; for the carpenter work, Mr. Lindsay; for the plumber work, Mr. Lockhart; for slater work, Mr. Morrison; and, for the plaster work, Mr. Gilately. Mr. Robert Balfour is the clerk of the works. The works are being carried out from the designs and under the superintendence of Mr. Charles Wilson, of Glasgow.

THE THAMES EMBANKMENT.

AMONG other points Mr. Thwaites has suggested the following for consideration by the Commission in reference to the embankment of the south side of the Thames:—

“Assuming the necessity for a southern embankment to be conceded, it may still be useful to consider, at the outset of our inquiry, the prominent reasons for such a work, as in some degree indicating the course which may most advantageously be pursued.

“The plan already reported on for the northern side demands the removal of very large quantities of deposit from the shoals in the river, many of which immediately adjoin the southern shore; this operation will have a great tendency to cause a constant settlement towards the deepened portion of the river's bed, and consequent injury to the piling, wharf walling, and other defences on that side; some of these are already old and decayed, or were originally but imperfectly adapted to their situation, and hence we may conclude that it will be necessary to provide a solid wharf wall along all that part of the southern shore which fronts the embankment previously recommended.

“But there is another urgent reason for the southern embankment, which must exercise a considerable influence on the framing of any scheme for that side, viz., its liability to constant injury from flooding. The extent of this evil, its heavy pressure on the large laboring population of the parishes adjoining the river, the misery, sickness, and death produced by its periodical recurrence, with the consequent heavy charges on the rates, can only be thoroughly appreciated by those who have themselves witnessed its effects. Obviously to carry out thoroughly any effective remedy, the future embankment must be of sufficient height to be above the reach of the highest tide—viz., 16 feet above ordnance datum, and it should be at least conterminous with the thickly inhabited portion of London beyond the Thames. Its precise limits will depend upon the evidence hereafter to be laid before the Commission, but the termination of the embankment already carried out by Her Majesty's Office of Works in connexion with Battersea-park and bridge, might form a convenient commencement on the western side. Some difference of opinion will probably exist as to its extent eastwards, but it must be remembered that London-bridge forms neither a moral nor material limit of the metropolitan area: the inhabitants of Bermondsey and Rotherhithe suffer equally from floods with those of Lambeth and St. Saviour's, and are equally contributory to metropolitan burdens.

“The third head of inquiry is the improvement of the means of communication in connexion with the embankment. The new street in course of formation by the Metropolitan Board of Works, taken as a continuation of Stamford-street and the York-road, will form a very complete inland line of traffic from east to west; but, valuable as it is, increased facilities to the great transport trade on the southern bank, from Nine-elms to London-bridge, are urgently demanded. True, along certain portions of this bank several excellent links are found, such as that afforded by the Commercial and Belvedere-roads, and less completely by Bankside; but the defective sections adjoining Lambeth Palace, thence to Vauxhall, and between Blackfriars-bridge and Bankside, greatly need amelioration.”

BARRACKS AT CHELSEA.—Great progress is being made in the erection of the new barracks for the use of the Guards on the grounds adjoining Chelsea Hospital. When ready for occupation they will be capable of accommodating 1,000 men. In addition to detached houses for the officers and non-commissioned officers, the buildings will comprise separate dwellings for the married soldiers, a library and reading-rooms, a lecture-room, ball courts, gymnasiums, skittle grounds, baths and washouses, a provost prison, guardhouse and lock-up, canteen, and quartermasters' stores. The soldiers' quarters, which form the main portion of the building, are in a very forward state, and the officers and non-commissioned officers' quarters are already roofed in.

SOUTH KENSINGTON MUSEUM.—The South Kensington Museum was closed on Wednesday evening, the 1st inst., and will remain so on each Wednesday until further notice. The free open evenings are now Mondays, Tuesdays, and Saturdays, until 10 o'clock. The last day has been substituted for the Wednesday suppressed. During the week ending 4th January, 1862, the visitors have been as follows:—On Monday, Tuesday, Wednesday, and Saturday, free days, 8,665; on Monday, Tuesday, Wednesday, and Saturday, free evenings, 4,713. On the three Students' days (admission to the public 6d.), 924. Total, 14,302. From the opening of the Museum, 2,421,233.

THE NEW FINE ARTS COURTS, SOUTH KENSINGTON MUSEUM.

THE first portion of the permanent buildings of the South Kensington Museum will shortly be completed. The public will find therein another opportunity of sitting in judgment upon Captain Fowke's powers, and professional men another target for criticism.

We are no partisans of Captain Fowke. We have criticised his works, but we have done so fairly and honestly. We cannot turn our backs upon the arcades of the Horticultural Society, which do not, to say the least of them, suffer by comparison with those of Mr. Sidney Smirke—to strike a blow at Captain Fowke's reputation through works which he did not design, and we do not refuse him a place amongst architects because he has had the advantage of a scientific education. We wish to judge of the executed designs quite irrespective of the consideration that the author of them is or is not a regularly-trained architect. A good design by even an amateur is far more acceptable than an indifferent one by a recognised professional man. In this spirit, we proceed to describe Captain Fowke's recent work at the Department of Science and Art.

It is scarcely necessary to remark that the whole of the buildings now constituting the Museum were meant to be but temporary structures. The contemplated front towards the main road consists of two wings, with a curved receding central feature in the Italian style. This will eventually supersede the block of shanties which now fringe the thoroughfare.

The permanent Museum has, however, been begun at the north-east corner of the site, to the north of the Iron Museum, and to the east of the Turner, Vernon and Sheepshanks galleries. This first instalment comprises a Northern and a Southern Fine Art Court, with offices to the east of them on the ground floor, and picture galleries above. The South Court is the one first reached from the northern extremity of the "Boilers." It is 114 feet wide by 110 feet long. There is a passageway running down the centre, which leads to the Northern Court. This passage is flanked by coupled spiral iron columns, with relieved ornament on central bands. They support an upper open corridor immediately over the lower passage. Right and left of this passage are the two divisions of the Southern Court, covered by an arched glazed roof of wrought-iron ribs, which spring from the columns of the upper corridor to the walls on the other sides. These roofs have each a span of 45 feet; rafters are laid upon them, and a lantern, 16 feet wide, having louvres on each side of it for ventilation, occupies the centres of both roofs.

At the far end of each division corridors run east and west from the upper corridor before referred to, and communicate with galleries beyond the flank walls of the court. These transverse corridors are carried by iron columns similar to those before mentioned. The caps are foliated, without being copied from the stock Corinthian patterns.

The whole of the columns stand upon pedestals, or rather the lower portions of the columns are bricked round up to the level of the moulded bases, and then covered with cement to form pedestals. The flank walls of the courts are pierced by a series of arched openings, with circular medallions in the spandrels, connecting the court with the rooms on either side of it. These arched openings are of the height of the columns which support the gallery. Each bay in the upper stage is subdivided by a Corinthian column, standing over the keystone, into two flank arches.

The height of the court is 18 feet to the springing of the wrought-iron ribs, 32 feet to the feet of rafters, and about 45 feet to the underside of ridge. The passage in the centre has ornamental gratings in the floor covering the warming pipes. The floor above is Fox and Barrett's iron and concrete fireproof flooring. The roof of the upper corridor is arched with raking rafters, similar in principle to the large ones beside it.

A door in the centre of the wall at the far end leads into the Northern Court—a spacious and imposing apartment 110 feet square, without a column or pier of any kind, from wall to wall. Nothing obstructs the view of its great extent. The skill with which it has been roofed, without appearing heavy or oppressive, enlists our warmest admiration. At a quarter space from all the four walls lattice girders, 10 feet high, run at right angles with each other. The ends of the girders rest on columns, so that they are supported quite independently of the walls. They meet in four strong iron standards, and thus divide the roof into nine compartments, all hipped, and glazed with Hartley's rough plate. The central compartment is 55 feet square, the four on each side of it 55 feet by 27 feet 6 inches, and those at the four angles 27 feet 6 inches square. Over the door, between the courts, the beautiful marble gallery, from the church of Santa Maria Novella, which was bought at Florence a few years ago by Mr. Robinson, and which at the time attracted no inconsiderable amount of public interest, has been permanently fixed. On either side of it workmen are building against the wall models of the famed doors of the Florence Baptistery.

The whole of the brickwork to these courts has been laid with Captain Scott's cement, and the walls are coated with the same officer's patent plaster, which is as cheap as ordinary plaster, and sets as quickly and is as durable as the best Portland cement. It is manufactured by Lee and Sons. There are eleven segment-arched openings on each of the side walls, thus extending the area of the court under the adjoining galleries. The floors are laid with asphalt.

Retracing our steps, mounting a staircase, and passing along the open corridors of the Southern Court, we enter the galleries at the eastern side of it. There are two in number, placed parallel to each other, with an open arcade between them. The light in these galleries is admirably arranged. An ordinary glazed roof seems to cover them, but by means of

longitudinal beams between the tie-beams the ceiling is divided into compartments. The central portion is glazed by flat sliding sashes filled with ground glass, whilst ornamental iron panels, through which a subdued light enters, is introduced into the side compartments. These are divided one from the other by foliated concave trusses, which rest on the imposts of the arcade, and abut upon the tie-beams. The galleries are beautifully proportioned, and, as we have said, admirably lighted, whilst the small amount of architectural decoration is most judiciously disposed. We have seldom seen better modelling or casting than that shown in the trusses, and the iron ventilating panels have also a decided artistic stamp upon them. This is due, we believe, to the personal superintendence of Mr. G. Sykes, now attached to the Department of Science and Art, and formerly master of the Sheffield School of Art. The floor is Fox and Barrett's. These upper galleries are warmed in a novel way. The concrete is removed, at intervals of some 20 feet, from between iron joists, and the warming pipes supported by iron cradles fixed between them.

To the east of the North Court, on the same level as those we have just mentioned, four new galleries will eventually be built, but one only is at present in course of erection, and that is insufficiently advanced to enable us to judge of its future appearance.

Taken together, these new works at South Kensington are highly creditable to Captain Fowke. He employs wrought and cast iron extensively, and in a novel fashion, and he seems to have had ever present in his mind the destination of the courts. The efficiency with which he has warmed, ventilated, and lighted them is as conspicuous a facility with which he disposes of huge girders, and introduces decorative novelties.

The works have been executed entirely by Messrs. Kelk and Co.; Mr. Coates is the clerk of the works. Messrs. Kelk's foreman is Mr. Poynton.

WORKS ON THE LONDON, CHATHAM, AND DOVER RAILWAY.

THE works on the West-end Extension of this railway are of considerable magnitude, and consist of $4\frac{1}{2}$ miles of cuttings and embankments, $1\frac{1}{2}$ mile of tunnel, and 4,262 feet of viaduct, making together $6\frac{1}{2}$ miles. The City Extension line is to consist of 1 mile of cuttings and embankments, $3\frac{1}{2}$ miles of viaduct, a bridge over the Thames, crossing close to Blackfriars-bridge, making together about $4\frac{1}{2}$ miles of line; a goods' station by the water side, and a passenger station at each side of the river. On the West-end Extension the works are in a more advanced state than those on the City Extension. Near the point of junction at Battersea about 60 acres of land have been secured, upon part of which coke sheds, and a semicircular building for housing 21 locomotive engines, with repairing shops to the rear, have been completed. Extensive ranges of buildings are in course of construction, in which suitable machinery will be fixed for manufacturing engines and other rolling stock for the railway, on a similar plan to that adopted at the Wolverton establishment of the London and North Western Railway Company. Some of those buildings are in a forward state, and with the present rate of progress the whole will be completed in the course of a few months. A portion of the main line from its junction with the Pimlico line has been laid out for about one-third of a mile to the point where the viaduct commences. The greater portion of the brickwork has been completed between that point and the intended station at Dulwich, and the whole of this work is expected to be completed, and the iron girders erected over the roads, streets, and highways which the line crosses, in about nine weeks. The brickwork of this portion comprises a viaduct of 17 arches adjoining the Wandsworth-road, a viaduct crossing the Clapham and Bedford roads about 1,000 feet in length, and a viaduct at the Manor-rise on the Brixton-road of 1,600 feet in length, making together 3,110 feet of viaduct. These viaducts for the greater portion of their length are constructed on a circular plan and have been very substantially executed. The uniformity in the color of the bricks, and the workmanlike manner in which they are put together, form a striking contrast to many other works for a similar purpose. Of the works on the City Extension line, which branches from the West-end Extension line at the Dulwich junction, there is now completed upwards of a mile and a quarter of viaduct along the back of the gardens and houses in the Camberwell and Wandsworth-roads. About half the length of this viaduct has been ballasted, and the permanent way is being laid down. This viaduct is advancing at the rate of 60 feet in length daily, and is expected to be completed to a point near the Elephant and Castle by August next. The brickwork on this extension is also of the same good quality as that on the West-end line.

The works for the main line beyond Dulwich towards Beckenham junction are in course of construction. The chief work on this section is a tunnel upwards of a mile and a quarter in length, passing, as before stated, under the Sydenham Hill and the Brighton Railways. Seven shafts have been sunk from the top of the hill into the tunnel, and the excavation is carried on to the full size in both directions from each shaft, making 14 faces to work upon, and thus facilitating the progress very materially. About one-fourth of the tunnel has thus been completed, and the average progress of the tunnel is at the rate of 250 feet per month. So soon as a short length of the tunnel has been excavated to the full size, the bricklayers are set to work, and that portion so excavated is completed before any further advance in the excavation at that point is made. The operation is then repeated, and the brickwork is completed for a further length. The thickness of the brickwork varies from 19 to 14 half-brick, according to circumstances; the bricks are of the hardest kind, manufactured on the spot in great quantities by means of powerful machinery. All the bricks used are very hard and compact, and some of them, made by one machine in particular, are beautifully formed, very solid, presenting a polished surface of an excellent red color. It often happens that in the course of a fortnight the clay excavated and brought out of the tunnel is carried into it again in the shape of solid hard bricks. The improvements and experience of the past 20 years, have been brought to bear in providing materials and facilitating the progress of the works on these metropolitan extensions, and the result has been much greater than was anticipated. There are at present about 2,000 men and 250 horses employed upon the works.

THE PROPOSED NEW MUSEUMS AT CAMBRIDGE.

IN connexion with the proposal long under consideration to provide additional Museums and Lecture-rooms at Cambridge, the syndicate appointed in 1853 to confer with Mr. Salvin, and to instruct him to prepare suitable designs, have now reported to the senate, that—

"In their report, dated 31st December, 1853, and confirmed by the senate 8th February, 1854, they enumerated the various lecture-rooms, museums, and laboratories which appeared to them to be necessary to meet the requirements of the university, and they indicated the character of the buildings which it seemed advisable to adopt. In accordance with the recommendations of this report, Mr. Salvin prepared a plan and estimate in 1854, but, owing to the difficulty in obtaining the requisite funds, no steps were taken towards carrying it out. At the beginning of the present year a syndicate was appointed to examine the funds available for university buildings, and in consequence of their report various sums of money and stock, with the accruing profits thereof, besides an annual contribution of £1,000 from the university chest, were by grace of the senate, 25th April, 1861, specially set apart as a fund for the erection of new museums and lecture-rooms; giving a total which may at present be estimated at £27,000, and may be expected before the completion of the works to amount to upwards of £30,000.

Funds having been thus shown to be available for the commencement of the work, Mr. Salvin's plans were again taken into consideration, and it appeared that for various reasons it would be desirable and necessary to make many changes in the disposition of the buildings. The professors were requested to revise the statements of their respective requirements, upon which the former design had been founded, and Mr. Salvin has, at the request of the syndicate, and in accordance with these instructions, prepared an entirely new set of plans, accompanied by the estimate which follows.

These plans appear to the syndicate to be admirably arranged, and in every way to fulfil the various and complicated purposes for which they are designed. They are now submitted to the senate for their approval.

ESTIMATE.

	£	s.	d.
1. The building with front towards Freeschool-lane, containing two large lecture-rooms adapted to the requirements of the theological and literary professors.....	6,383	5	0
2. The central group of buildings, containing lecture-rooms for the Plumian, Lowndean, Lucasian, and Jacksonian professors, and for the professors of anatomy, mineralogy, and botany; rooms for philosophical apparatus, and private rooms for the several professors; museums of comparative anatomy, zoology, mineralogy, and botany, with a gallery for optical experiments, &c.....	19,692	6	0
3. Additional building for the chemical department.....	400	0	0
	£26,475	11	0

The above estimate is exclusive of the architect's commission and the salary of the clerk of the works. It is somewhat higher than that prepared by Mr. Salvin in 1854 for the completion of the plan then designed by him, but the difference is accounted for by the greater extent of building, and by the cost of the deep foundations and complete draining of the site, which were not included in the former estimate.

The syndicate, comparing this estimate with the amount of available funds above stated, are led to conclude that the principal part at least of the above-mentioned works may be commenced immediately; but as it may not be found advisable at once to complete the whole, they recommend that tenders be obtained, under the direction of the syndicate, and subject to the approval of the senate, as follows:—

1. For the completion of the whole works.
 2. For the completion, separately, of the building in Freeschool-lane, containing the two large lecture-rooms.
 3. For the completion, separately, of the central group of buildings.
 4. For the additional building of the chemical department.
- The syndicate beg to accompany their report with a detailed account of Mr. Salvin's plans, by Professor Willis.

(Signed)

GEO. PHILLIPS, V.C.	R. WILLIS.
W. WHEWELL.	G. G. STOKES.
H. W. COOKSON.	F. FRANCE.
JAMES CARTMELL.	JOHN LAMB.
W. H. MILLER.	

The following is a description of the designs, prepared by Mr. A. Salvin, in conformity with the instructions of the lecture-room syndicate* :—

The proposed buildings are arranged about a quadrangular court, 138 feet from the north to south, and 114 feet from east to west, and occupy about three-fifths of the old botanic garden. The outer walls of the quadrangle are separated from the irregular eastern and western boundaries of the garden by a space of about 40 feet in breadth, and are in closer proximity to the northern boundary, but the south front is 150 feet from Pembroke-street, leaving space sufficient for a future building in that street if required. This front consists of two square masses or towers connected by a lower building, having a carriage archway in the centre. The western tower has the lecture-room of the Jacksonian and the botanical professors on the ground floor, and that assigned to the Lucasian, Plumian, and Lowndean professors above.

The apparatus-room and private room of the Jacksonian professor are contained in the lateral one-storied appendage on the west side of the tower; and the apparatus and private rooms of the three last named professors extend along the upper story of the intermediate building, the lower floor of which is occupied by the museum of philosophical apparatus.

The natural sciences are disposed in the remaining three sides of the quadrangle, human anatomy excepted, which is retained in the buildings especially erected for its reception in 1831. Chemistry also remains in its ancient position. In the new quadrangle botany is placed on the ground floor of the west side, in contiguity with the lecture-room which it shares with the Jacksonian professor; mineralogy on the first-floor, having its lecture-room at the north end. Comparative anatomy occupies the east side of the quadrangle, with a museum on a single floor, of which it is proposed at present to erect only about one-half. Its lecture-room, dissecting-rooms, &c., are placed on the

ground floor of the eastern tower, and in the lateral one-storied building which corresponds to the Jacksonian appendage at the other extremity of the façade. Above the lecture-room of comparative anatomy is the zoological museum. The north side of the quadrangle is reserved for geology, whenever it may be required to remove it from its present position beneath the university library. Thus the natural sciences of botany, mineralogy, geology, comparative anatomy, and zoology, will be placed in a connected series of museums.

The theological and literary professors—namely, those who require neither museums, laboratories, or other appendage to the lecture-room, except a small private room, are located in a detached building at the entrance-gate in Freeschool-lane. This building contains two lecture-rooms, one on the ground floor, 39 feet by 32 feet, which will seat 250 persons; and another on the upper floor, 48 feet square, capable of accommodating more than 400 persons. There is also a spacious double staircase to the latter lecture-room, and an entrance corridor which leads to the buildings of the principal quadrangle. Beyond this corridor, on the left hand, is a building which projects from the north end of the quadrangle. Its ground floor contains rooms for a porter or keeper of the buildings, below the private rooms of the mineralogical professor.

It must be remarked that any of the lecture-rooms in the building may be employed as examination-rooms, by the contrivance of applying desks in front of the rising benches.

The report of December 31, 1853 recommended that "the style of the buildings be as plain as possible, and the material brick; that there be no unnecessary expenditure upon architectural decoration; but that the architect be requested to display his skill rather in the perfect adaptation of the various apartments to their use, and in their convenient juxtaposition," &c. Accordingly, the only portions of the proposed buildings in which architectural symmetry and decoration are employed are the south front facing Pembroke-street, and the west front in Freeschool-lane. These are designed in a simple and suitable Italian style, capable of being carried out in brick with stone dressings. The remainder of the buildings within and without the quadrangle are of plain brick.

The apartments respectively assigned to the professors have been arranged in conformity with written reports of their requirements, originally furnished by these gentlemen at the request of the syndicate, contained in the report of December 31, 1853, and revised by them during the present year. It remains to explain in detail the manner in which these requirements have been embodied in the present plan.

The Lucasian professor is placed at the south-west corner of the upper floor of the building. His lecture-room has a western and a southern outward wall, in each of which is a window especially formed for the reception and management of a heliostat. The one in the west wall corresponds to an opening or horizontal trunk through the rising seats, by which the solar ray may be directed upon the lecture table. The remaining windows are provided with shutters that can be conveniently closed when the lecturer desires to exclude light. Contiguous to the east wall of the lecture-room are two rooms, one for private study and delicate apparatus, the other for the storage of frames and unwieldy lecture apparatus. Both of these are lighted from the south, and the doors of communication so arranged that the heliostat ray from the west window of the lecture-room may be transmitted into them if required. The rooms have also a separate entrance from the staircase without.

A loft for optical experiments is arranged in the roof of the western range. It consists of a long narrow gallery or garret, extending from the north gable to the staircase at the south end of that range. A ray of sunlight received upon the mirror of a heliostat placed at a window in the south wall of the lecture-room, is transmitted directly through an opening in the north wall, and thence over the staircase into and along the gallery. The total distance from the heliostat to the north gable of the gallery is 220 feet. Near the north extremity of the gallery its width is increased, by a transept in the roof, for the convenience of arranging apparatus. Access to the gallery is obtained by a flight of steps from its southern extremity, which descends to the landing of the lecture-room staircase, and thus ut once to the rooms of the Lucasian professor. In consequence of the difference between the height of the museums in the western wing, in two stories of 12 feet each, and of those of the lecture-rooms, which are 20 feet high, the floor of this optical gallery is only 6 feet above that of the Lucasian apartments.

The lecture-room of the Lucasian professor is also assigned to the Plumian and Lowndean professors of astronomy, and three rooms, lighted from the south and connected with the lecture-room by doors opening into a short passage, are intended for the private rooms of the Plumian and Lowndean professors, respectively, and for a common apparatus room.

Upon the roof of the lecture-room tower a clear flat uncovered area, 15 feet square, surrounded by a parapet, is constructed, which is reached by means of a staircase next to the lecture-room. The transverse division-wall, which separates the lecture-room tower into two portions, is carried up to the level of this platform, so as to serve as a foundation for two stone slabs upon which astronomical instruments can be placed for students' practice in observation.

The Jacksonian professor is provided with an apparatus room of the same dimensions as that which he at present occupies in the old building, and in addition with a private room that may be used as a workshop and unpacking-room.

The Museum of Philosophical Apparatus is placed on the ground floor of the central portion of the façade. Three rooms, of a total length of 80 feet, are assigned to it, and it is conveniently accessible from the Jacksonian lecture-room, and also by means of the staircase at the north-west angle, from the apartments of the professors on the upper floor. This museum is introduced in accordance with the report of the lecture-room syndicate, December 31, 1853, and is intended for the reception of models, machinery, and apparatus of all kinds that admit of being disposed in order for public inspection. It must be furnished with glass cases and other convenient fittings, in which the various professors of physical and mechanical science may deposit those portions of their apparatus which are suitable for public inspection, and which may also serve for the reception of such instruments of philosophical research as may become the property of the University by gift or purchase.

The Botanical Museum occupies the great part of the ground-floor of the western side of the quadrangle. It consists of two rooms, respectively 62 feet and 35 feet long and 24 feet broad, lighted by windows on the west side. Its entrance is at the north end. At the south end is placed the private room, unpacking-room, &c., of the professor, which is in communication with his lecture-room, held in common with the Jacksonian professor.

* The plans will be suspended in the council chamber of the Fitzwilliam Museum for the inspection of the members of the senate.

The upper floor of this side of the quadrangle is appropriated to the mineralogical professor. His museum is placed in two rooms, each 63 feet long and 24 feet broad, with windows on both sides. His lecture-room is at the north end of the museum. A staircase, constructed between the north boundary-wall of the ground and the gable of the building, leads up to a passage on the east side of the lecture-room and museum, and thus, by two doors, gives independent access to them. A short wing projects from the west side, and contains the professor's laboratory, apparatus-room, and private room. The latter, from the peculiar nature of his observations, requires considerable length. It has at the west end a window with a bracket for a heliostat, the ray from which can be transmitted along a distance of 38 feet within the room, or beyond it through a door so as to reach the lecture table.

The lower story of this wing (partly fitted up as a porter's lodge) also contains a small laboratory for mineralogical students.

The Museum of Comparative Anatomy is placed on the eastern side of the quadrangle. In dimensions it is 100 feet long and 40 feet broad, which, according to the professor's statement, will be sufficient to hold the present collection. Its position on the ground, however, admits of a future elongation to the extent of 80 feet. To facilitate this, it is proposed to construct the gable with a large archway, closed by a wall. Thus whenever the additional structure is completed, this wall can be readily removed, and the whole will be laid in one.

On the south of this museum is placed the lecture-room, 43 feet by 32 feet, in contiguity with which is the professor's room, 21 feet by 18 feet; also a room, 26 feet by 15 feet, for dissections, mounting skeletons, &c.; a servants'-room, and a spare room for stowing packing-cases, and objects in preparation for the museum. These rooms are contained in the lateral one-storied wing of the façade, and are all well lighted and are in communication with the back-yard on the east of the museum.

The room above the anatomical lecture-room is assigned to zoology.

It is proposed that the chemical professor should retain the present Jacksonian lecture-room, and also occupy the room now appropriated to the Jacksonian professor, as well as the rooms to the north of it which were erected for chemistry in 1831, and that these should receive the addition of an upper story to the north of the lecture-room, with other necessary alterations, to adapt them to the present state of the science, and for the reception of students in practical chemistry.

The designs are contained in the following plans, sections, and elevations, drawn to a uniform scale of 8 feet to the inch:—

1. Ground-plan of the whole site and of the proposed buildings. This includes the existing lecture-rooms, &c., at the south-east angle, the walls of which are distinguished by a dark tint, and the proposed alterations in them by a pink tint.
2. First-floor plan of the building in Freeschool-lane, containing the great lecture-room; the ground-plan of this is included in No. 1.
3. Plan of the upper story to be added to the existing chemical buildings, for a students' laboratory.
4. First-floor plan of the buildings of the quadrangle.
5. Longitudinal section of the south range, including the Jacksonian and Lucasian lecture-rooms, with the platform for astronomical observations on the roof over them, the museum of philosophical apparatus and the private and apparatus rooms of the professors above it, the lecture-room of comparative anatomy and the museum of zoology.
6. Transverse section of the west range, including the botanical museum, the mineralogical museum, and the optical gallery in the roof.
7. Longitudinal section of the west range, to show the relative levels of the above museums and gallery to the Lucasian lecture-room, and the manner in which the solar ray, indicated by the red broken line, is transmitted through the openings in the walls of the lecture-room into the gallery.
8. Plan of the optical gallery.
9. Elevation of the south front.
- 10, 11, and 12. West elevation, east elevation, and transverse section of the building in Freeschool-lane.
- 13 and 14. Block plans to explain the general distribution of the buildings.

LONDON ASSOCIATION FOR THE PREVENTION OF STEAM BOILER EXPLOSIONS.

A LONDON Association is now in course of formation, having for its object the prevention of steam boiler explosions, and the effecting economy in the raising and use of steam. A similar institution has existed for six years in Manchester, under the presidency of Mr. W. Fairbairn, who, we learn, is also the president of the association now forming, and during that time a very large number of boilers have been submitted to the inspection of the officers of the association.

It appears from the published rules that the district to which the operations of the Association shall extend shall be that part of England south of a line drawn across the country from east to west, through and including the towns of Yarmouth, Rugby, Warwick, and Aberystwith.

That the members of the Association shall consist of subscribers to the funds of the Association, and shall be divided into two classes—viz.:—1. Persons who place steam boilers under the inspection of the Association. 2. Persons who do not use steam boilers, or do not place them under the inspection of the Association.

That an annual meeting of the members (consisting of not less than ten members) be held in the month of January each year, at which they shall elect a president and council for the management of the business of the Association.

That the expenses of the Association be met by an entrance fee of two guineas, and an annual subscription from all members of one guinea; and from members having boilers inspected by the Association, an annual subscription for each boiler in regular or occasional use upon the works of the member, according to the following scale of charges:—

1 boiler	30s. per year.	6 and 7 boilers . . .	19s. each per year.
2 and 4 boilers . . .	25s. each per year.	8 and 9 boilers . . .	18s. each per year.
4 and 5 boilers . . .	21s. each per year.	10 and above . . .	17s. each per year.

That the entrance fund be, as far as possible, reserved by the council for the purpose of promoting such experiments and investigations as may tend to throw light upon the causes of boiler explosions, or may otherwise promote the objects of the Association.

That the duty of inspecting the boilers and steam-engines of the members,

and all apparatus pertaining thereto, be discharged by one or more competent engineers, aided by a sufficient number of local inspectors, to be appointed by the council.

That it shall be the duty of each engineer to give to the members, free of cost, information and advice with respect to the various forms and constructions of boilers, steam-engines, and all apparatus appertaining to them, so as to guide the members to the safest and most economical means of raising and using steam.

That the duty of the inspectors shall be to visit periodically, under the direction of an engineer, the steam department in the establishments of the members in their respective districts, to examine the boilers, safety-valves, feed apparatus, and other parts on which safety depends; and, when ordered by an engineer of the Association, to note the steam pressure and consumption of fuel, and to report the information obtained in writing to him.

That in all cases of inspection, by an engineer or by an inspector, a report in writing shall, when required, be made through such engineer to each member whose works have been so inspected, specifying the facts and results, with such remarks as those facts suggest.

That the facts and practical results obtained in the course of inspection shall be classified and recorded in books open for the inspection of members, at the offices; but in all such records each firm shall be designated by a number, and the names of firms shall only be given with their consent.

It is pointed out that the members and promoters of the Association are not to derive any pecuniary benefit from its operations, but have solely in view the promotion of an object of great public importance.

It is worthy of note that Mr. Fletcher, Chief Engineer of the Association at Manchester, lately examined 315 engines and 436 boilers, 6 of the latter being examined specially, 8 internally, 22 thoroughly, and 400 externally, in which the following defects were found:—Fracture, 2; corrosion, 25 (2 dangerous); safety-valves out of order, 7 (2 dangerous); water-gauges ditto, 9 (3 dangerous); pressure-gauges ditto, 6; feed apparatus ditto, 3; blow-off cocks ditto, 40; fusible plugs ditto, 1; furnaces out of shape, 10 (3 dangerous); deficiency of water, 2; over pressure, 4; boilers without safety-valves, 1 (dangerous); total, 110 (11 dangerous). Boilers without glass water-gauges, 18; ditto without pressure-gauges, 19; ditto without blow-off cocks, 9; ditto without feed-back pressure valves, 39.

Now that steam power is being so largely introduced into workshops and manufactories, such an Association properly conducted cannot fail to be attended with beneficial results. We have only a doubt as to the rates of fees, which may deter some from availing themselves of the services of the officers of this Institution.

THE OBSTRUCTION AT THE EUSTON AND HAMPSTEAD ROADS.

SIR,—The inhabitants of the neighbourhood of Tottenham Court-road are very much exasperated at the manner in which the shop at the corner of the Euston and Hampstead roads is being re-erected; the old house has been for years a great nuisance to the neighbourhood, and particularly so to persons waiting for the omnibuses. That such an opportunity should be allowed to pass away without setting the house back to its proper place (in a line with the other houses in the row), has caused the loud complaints from the people living in the neighbourhood which we now hear, it being the opinion generally that the house should have been set back to the general line of frontage. There is some talk of petitioning the magistrates not to grant a license to the new house; such a proceeding would justly merit the approbation of all lovers of order and improvement.

AN INHABITANT OF THE NEIGHBOURHOOD.

WARM CLOTHING.—It is a mistaken idea to suppose that fabrics made of coarse wool are the warmest and most durable. Owing to the lower prices of coarse wool, fabrics of this material are usually made heavier than those of fine wool, hence their greater thickness deceives persons respecting their qualities for warmth and wear. There is no heat in the wool itself; its property of what is called "warmth" is due to its non-conducting qualities. If we grasp a bar of iron on a frosty morning it produces a disagreeable cold sensation, because it is a good conductor of heat, and the warmth of the hand is rapidly carried off by the metal. On the other hand, a piece of woollen cloth, especially if it has a long nap upon it, does not feel cold because it is a good non-conductor, and prevents the heat passing rapidly from the hand. Now the warmest fabric for clothing is that which is the best non-conductor, and Count Rumford made a great number of experiments with different materials in order to find out the best. According to his observations the down of the eider duck, which the Esquimaux use in their clothing, is unrivalled in this respect; and the finer the fabric of woollen cloth used, the more imperfectly did it conduct the heat from the human body. As fine woollen cloth is superior to that of coarse wool as a non-conductor, it is therefore the best for clothing in keeping the body warm during cold weather. We are also positive that cloth made of fine wool equal in thickness to that manufactured from the coarser material will wear much longer. The finest woollen cloth, although dearest at first, is cheapest in the end, because it is more durable and warmer; and, according to Liebig, so much heat saved is so much meat gained. It must not be overlooked, however, that there may be a very great difference between what is called "firm cloth" and cloth made of fine wool. Fine wool feels pleasant and soft to the touch, and it has a rich velvety appearance. There has been a great demand recently for coarse wool to be used in the manufacture of common army and other cloth, but every effort should rather be made to obtain plenty of cheap fine wool, because it is the warmest and best for clothing.—*Scientific American*.—A patent has lately been taken out for the manufacture or production of various waterproof articles of wearing apparel, in such a manner that they may be thoroughly ventilated, and egress allowed for the perspiration or exhalations from the body, while at the same time water is effectually prevented from passing through the garment. This is effected by perforating the garment or article in various parts, and adapting to each of these perforations a short tube, which passes upwards inside the garment or article.

THE EXAMINATIONS AT SOUTH KENSINGTON.

WE give the following from the examination papers just issued by the Science and Art Department at South Kensington.

Subject I. *Geometrical Drawing.* Subdivision II. *Mechanical and Machine Drawing.*—Examiner, Professor T. BRADLEY.

MECHANICAL AND MACHINE DRAWING.

N.B.—Where no scale is specified it is left to the candidate's judgment, but in every case he must specify the scale he employs. As ample time is allowed for the drawings the candidate is to make, they must be carefully finished and shaded sufficiently to express the forms. No credit will be given for any drawing not strictly complying with the conditions of the question.

Section I. and Section II. refer to the accompanying rough figured sketch (intentionally out of proportion) of a crab or windlass, the candidate to make from it the drawings specified in either of those sections, but not more than three from sections I. and II., and one only from each of the other sections.

Section I.

1. A front elevation.
2. A side elevation.
3. A plan.

Scale, $\frac{1}{4}$.

Section II.

1. A segment of the wheel comprising about six teeth and one complete radius. Scale, $\frac{1}{4}$.
2. The pinion, with a side elevation of it.
3. A vertical section of the whole machine perpendicular to the axis of the cylinder.

Section III.

1. Show by a section the double action pump and valves for a common air-pump.
2. Draw the plan and section of a stage for a microscope, with slow motion adjustments in two directions; the slips to hold down the object-slides to be shown.
3. Draw the plan and section of the compass, and box hung in gimbals, in a binnacle. (The "compass" on the card need not be drawn.)

Section IV.

1. Show in skeleton outline, in three of its positions the grasshopper parallel motion for a marine-engine.
2. Draw to its full size the eight-sided nut with its washers and part of the bolt, for bolting down the cap on the brasses of the paddle-axle of a highly finished marine-engine of 400 horse-power.
3. Show by a plan and section the solid conical axle, with its socket, collars, flanges, etc., on which a 30 feet turntable moves. Scale, $\frac{1}{4}$.

Section V.

1. Show the arrangement for reversing the motion of the table of a planing machine or printing press.
2. Show by a plan and elevation, or section, the slide-rest of a lathe for heavy work.
3. Show by an elevation the strike work of an eight-day clock.

Subject I. *Geometrical Drawing.*—Subdivision II. *Mechanical and Machine Drawing.*

MECHANICAL AND MACHINE DRAWING.

Subjects of pencil outline drawings of which two only are to be made by any one candidate.

1. Show some combination of levers by means of which an enormous pressure can be suddenly applied at one point resulting from a moderate force applied at another.
 2. A, B, C, representing equal circular disks, show how C can be made to perform 100, and B 10 revolutions, while A makes 1.
 3. Show how the action of a clock-weight on the train may be maintained while it is being wound up.
 4. Show how two pieces can be so attached that a thin blade may pass entirely through their junction without separating them.
 5. Show how the motion of a locomotive is reversed by means of two eccentrics on the axle of the driving wheel, the eccentrics being connected with the ends of a curved bar grooved.
 6. Show some combination for producing a very perceptible motion from an imperceptible one, as, for example, in the aneroid barometer or in Daniell's pyrometer.
- Whatever detail is shown in these figures must be drawn in a workmanlike manner.

Subject I. *Geometrical Drawing.*—Subdivision III. *Building Construction.*

BUILDING CONSTRUCTION.

Half the ground plan of a double cottage for two families is given; the two cottages to be precisely alike. The building to be two stories high, the front upper room to be divided into two by a deal framed partition, each room to have a separate entrance, and small sash window, and a small fireplace in two upper rooms.

The ground floor to be 9½ feet high in the clear, floored on joists, 6 feet by 2½ feet resting on dwarf walls, the earth to be dug out 2 feet below the under side of the floor, and to be kept dry by open gratings. The walls to be two bricks at foundations, and carried 1 foot below the lowest part of excavated ground, the level of the floor being 15 inches above the external ground.

The walls to be one brick thick above the lower story, carried to the height of 4 feet above the level of upper flooring boards, which are to be on joists 9 feet by 3 feet. The roof to be a simple A; tiled, rafters 6 feet by 2 feet, 18 inches apart with tie-beam, but no king-post; strong angle-ties at hips, tiles on battens, all the dwelling rooms to be ceiled, lean-to at back paved with Yorkshire stone, level of pavement 6 inches above ground laid on dry brick rubbish, a small copper and sink, window over door.

The drawings specified in Section I. and Section II. are to be made all to the same scale as that of plan. Every drawing to be correct in details and tinted to show the materials, but no candidate to make more than three drawings from these sections, selected at his own pleasure, and only five altogether.

Section I.

1. A front elevation of both cottages.
2. A plan of the upper story.
3. A cross section on AB (of one cottage only).

Section II.

1. A plan of the roof, to show that over the stairs and the mode of getting entrances to the upper rooms from the landing place.
2. A section on the line CD.
3. A sectional-elevation on EF

Section III.

1. Give a design for the truss for a roof of 60 feet clear span, rise 20 feet, tie-beam scarfed, a gallery down the middle 15 feet broad and 9 feet high, the flooring boards laid on bridging joists carried by the tie-beams, gallery lighted by dormer windows, roof slated on boards with felt covering between, gutters and parapet. Scale, $\frac{1}{108}$.
2. An isometrical projection of the connexion of the queen-posts, tie-beams, braces, &c.; the double queen-posts and tie-beams halved together with the braces between; showing the iron ties, stirrups, straps, &c. Scale, $\frac{1}{36}$.
3. The scarfing of the tie-beam shown by plan and elevation, or by one isometrical figure. Scale, $\frac{1}{12}$.

Section IV.

1. Give a plan of a circular angle-turret 7 feet internal diameter with stone walls in segments 10 inches, 8 inches, and 6 inches thick. An external gallery 18 inches wide, with parapet wall 4 inches thick, and 4 feet high; floor of the whole 5-inch stone slab in pieces not less than 20 feet area each, dovetailed together; a small stove, two doors and two windows; the whole carried on stone corbels on a corner wall 3 feet thick. Scale, $\frac{1}{24}$.
2. A section to show the corbels and their jointing and cutting through the door, fireplace, or window. Scale, $\frac{1}{24}$.
3. A drawing of the timbers of the conical roof, with projecting eaves over gallery, roof leaded on boards.

Subject I. *Geometrical Drawing.*—Subdivision III. *Building Construction.*

BUILDING CONSTRUCTION.

Questions to be answered in writing, and subjects for outline drawings in pencil by the candidates for certificates in Building Construction.

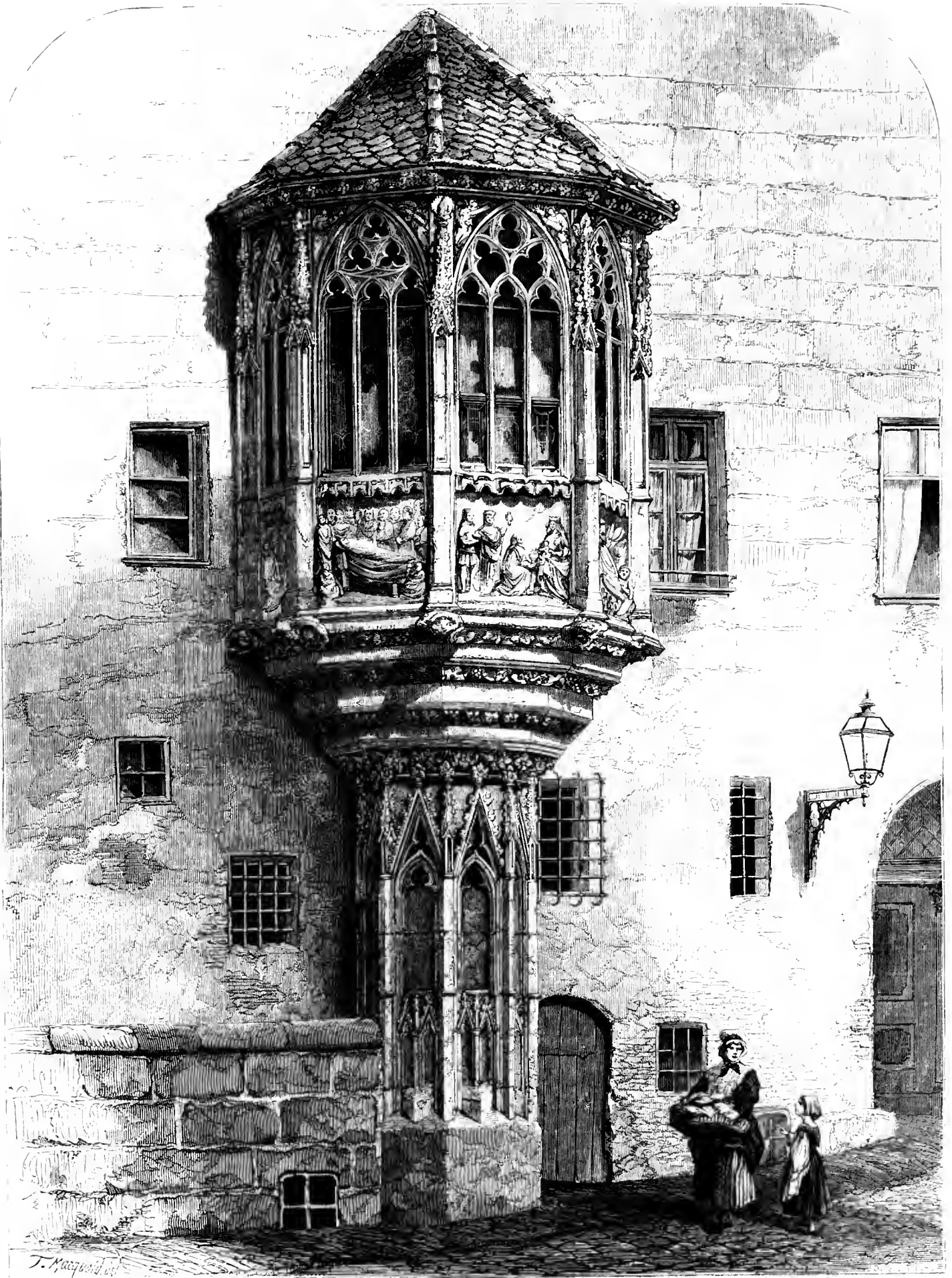
N.B.—No candidate to answer more than four questions in writing, nor to make more than four drawings or sketches in illustration of, or in addition to, those answers.

1. State what, in your opinion, was the reason for making the brick in the proportion of 1 : 2 : 4; and why was it not made twice or more as large as it is made?
2. Give a sketch, to scale, of the bond at the angles of walls of 1, 1½, 2, 2½, bricks thick, respectively.
3. Why is an inverted arch turned under the openings in all large buildings?
4. Give a design for a cornice to a building made of common bricks and tiles.
5. State the constituent materials and their proportions of good mortar, and why are road scrapings with all its impurities allowed instead of clean pit or river sand, formerly insisted on in contracts, and why was sea sand prohibited?
6. Give a drawing to scale, of one course of the solid masonry of a lighthouse of 25 feet diameter, built on a rock, and exposed to heavy seas and gales.
7. State how you would secure the foundations of a lofty building erected on a clay soil with a dip stratification.
8. Make a section, to scale, of a brick drain 3ft. wide and 5ft. high, and show the fall you think it ought to have.
9. State the reason for mortising the bridging joists into the sides of the girder in floors instead of notching them down on the top.
10. Make a section, to scale ($\frac{1}{32}$), of the timbers of a floor of 35ft. span.
11. State your opinion of the best mode of strengthening a girder 40ft. long and 12 in. + 11 in.
12. Give a drawing, to scale, of a sash frame with boxings and shutters, linings and architrave, for a good house.

INDIAN RAILWAYS.

THE *Engineer* reports that, at the meeting of the proprietors of the Bombay, Baroda, and Central India Railway, the Chairman remarked that, owing to the excellence of their gradients, they had conveyed large numbers of passengers over the portion of line completed in trains of seventy-four carriages, forty-nine carriages, and forty carriages respectively, each drawn by one engine. The construction of the iron bridges on their line had been looked upon as experimental to some extent, but it now appeared that they were a perfect success. The great work of the line—the Nerbudda bridge—had been completed and opened in May last. It consisted of sixty spans of 60 feet each, and was 70 feet above the bed of the river. During the monsoon the floods in the river rose 55 feet, and had a velocity of ten miles an hour. Owing to the alluvial nature of the soil it would have been scarcely possible to have built piers of masonry in such a position, but the screw-pile system of forming them, adopted by their consulting engineer, had answered admirably. They had also been successful in the easy gradients of their line, for they had conveyed 4,000 persons in a train weighing 720 tons, drawn by only one engine, on the occasion of the Hindoo holidays, but he would ask Colonel Kennedy, their consulting engineer, to explain that to them.

Colonel Kennedy, the consulting engineer, said, when he first proposed his plan for overcoming the difficulties of crossing the great rivers it was considered in the light of a hazardous experiment, but the plan was founded on the most careful analysis he could make. He knew that some special and extraordinary means must be taken in order to carry out the project. It was thought absolutely impossible to construct a railway in that direction, and he believed it would have been impossible by the ordinary means. The other object he had in view was to reduce the dead weight of their trains as much as possible by getting the most favorable gradients. It was rather difficult to avoid having similar gradients to those in England, but they did avoid them. The steeper the gradients on a line the shorter would be the train to ascend them, and the less effective would be their engine power. He then pointed to a diagram in the room showing that a passenger train six times the average length of passenger trains on English lines had been drawn at twenty miles an hour over their line by one engine, which showed the advantage of their level line. He could have easily found gradients of 1 in 100 on their line, and had some difficulty in avoiding



ORIEL WINDOW AT NUREMBURG.

them. The steep gradients on English lines not only limited the load, but materially added to the working expenses.

With regard to the train that had passed over their line, they would perceive that instead of having six engines and tenders to convey it in separate trains, they on their line only required one engine and tender to propel it, weighing probably 45 tons, and thus saving the dead weight of the other five engines and tenders, making together 225 tons. This was a most important matter in the cost of engines and in working the traffic on the railway.

They had to provide chiefly for third-class passengers in India. The proportion was about one first-class passenger to four second-class passengers, and 245 third-class passengers, so that in one of their long trains they had to provide for 12 first-class, 51 second-class, and 3,136 third-class passengers. They had some third-class carriages constructed in two stories, so that every one of those double carriages would hold 100 third-class passengers instead of 50. They would thus get rid of a considerable amount of dead weight, and reduce the proportion of working expenses to receipts. Their line was the most difficult to construct of any railway in India, and he believed its cost would not exceed £10,000 per mile, or £3,130,000; but if it had been constructed in the usual way they must have added £3,000,000 to its cost, and, with the usual gradients, 150 more locomotive engines and tenders would have to be provided at a cost of £450,000.

The third-class fares were one-fourth of those in England, the second-class fares were between one-third and one-fourth, and the first-class fares were one-half those charged in England. He thought that if they got 10 per cent. on their outlay with such fares they ought to be satisfied.

MEMORIALS

The Prince Consort and the Great Exhibition of 1851.—At a special meeting of the Committee appointed to erect a memorial of the Great Exhibition of 1851, held on Thursday, a communication was read from the Prince of Wales. This communication is, we believe, the first public letter written by his Royal Highness, and it will be read with the deepest sympathy. Our readers are aware that the first suggestion of a memorial of the Great Exhibition of 1851 was closely coupled with the name of the departed Prince. Most of the money for it was subscribed under the impression that the memorial would comprise a statue of the founder of the Great Exhibition. That idea was abandoned out of deference to the Prince. "Men," he said, "should not have statues raised to them while they are living." A statue of the Queen was consequently substituted; and the memorial has been brought by Mr. Durham to the verge of completeness on that understanding, and the principal figures are at this moment being cast in bronze at Birmingham. But the Prince's death has changed the situation. That attempt to do him honor which, living, he rejected, others, in their grief and admiration, have a right to renew. The desire of her Majesty and the Prince of Wales—and, we may add with certainty, that of the whole country—is expressed in his Royal Highness's communication:—

GENTLEMEN,—Prostrated with overwhelming grief, and able, at present, to turn her thoughts but to one object, the Queen, my mother, has constantly in her mind the anxious desire of doing honor to the memory of him whose great and glorious character the whole nation in its sorrow so justly appreciates. Actuated by this constantly-recurring wish the Queen has commanded me to recall to your recollection that her Majesty had been pleased to assent to a proposal to place a statue of herself upon the memorial of the Great Exhibition of 1851, which it was intended to erect in the New Horticultural Gardens. The characteristic modesty and self-denial of my deeply-lamented and beloved father had induced him to interpose to prevent his own statue from filling that position, which properly belonged to it, upon a memorial to that great undertaking which sprang from the thought of his enlightened mind, and was carried through, to a termination of unexampled success, by his unceasing superintendence. It would, however, now, her Majesty directs me to say, be most hurtful to her feelings were any other statue to surmount this memorial but that of the great good Prince, my dearly beloved father, to whose honor it is, in reality, raised. The Queen, therefore, would anxiously desire that, instead of her statue, that of her beloved husband should stand upon the memorial. Anxious, however humbly, to testify my respectful and heartfelt affection for the best of fathers, and the gratitude and devotion of my sorrowing heart, I have sought, and have, with thankfulness obtained, the permission of the Queen, my mother, to offer the feeble tribute of the admiration and love of a bereaved son, by presenting the statue thus proposed to be placed in the Gardens under your management.

(Signed) "ALBERT EDWARD."

The Memorial Committee, together with the Committee of the Horticultural Society (to whom a similar letter was addressed), unanimously agreed to carry out the wishes of her Majesty. As the memorial, designed by Mr. Durham, was completed under the superintendence of a committee, it was thought best for the sculptor and for the public that the alterations in it should also be made under the guarantee of a committee. Messrs. Foley, Marochetti, Westmacott, Smirke, Godwin, and General Grey were nominated a committee to confer on this subject with Mr. Durham.—*Atheneum*.

Memorials to the late Prince Consort.—A subscription was commenced on Monday evening amongst the inhabitants of Newport, Isle of Wight, for the purpose of defraying the expense of erecting, in St. Thomas's Church, a monumental tablet, or placing there a memorial window of stained glass, as the subscribers shall determine, to the memory of his Royal Highness the late Prince Consort, who assisted to raise the sacred edifice, both by his influence and his purse.—At Salford, a subscription is on foot to erect a memorial statue to the late Prince Consort. There is a statue of her Majesty in Peel-park, and it is now proposed to erect a companion statue to the Prince near it.—London and Manchester are making a move in the same direction.

The Stephenson Memorial.—Great progress has been made with the Stephenson memorial about to be erected in Newcastle. Four of the statues are already cast in bronze, and in the hands of the chaser; the fifth will shortly be out of the mould. The whole monument will be of that lasting character which alone is worthy of George Stephenson, the town, and the sculptor. Arrangement has been made to execute the pedestal for the reception of the five colossal bronze statues, in the most durable manner, and according to a specification supplied by the local committee. The stones for the pedestal have been for some time past in course of selection from the quarry chosen by that committee; but their large dimensions preclude their being collected from this one quarry other than gradually. The site affords space and area for the composition to detach itself, as a whole, from contiguous objects.

Monument to Sir Humphrey Davy, at Penzance.—The committee of working men, which has recently been formed for the purpose of erecting a

monument at Penzance to Sir Humphrey Davy, have received designs from architects, of which those by Messrs. Salter and Perrow have been selected. These designs are two in number: a monumental column surmounted by a bronze statue 10 feet high; and a monumental tower, with an internal staircase, and surmounted by the same figure—the height of the monument, from the base to the summit, to be 120 feet in either case. The column has a square solid block for its base; on this base rests a fluted portion of the pillar, some 20 feet long; on this rises a simple column, relieved by polished granite bands, some 40 feet higher, surmounted by a capital; on this rises a super-base, on which the figure of Sir Humphrey Davy is fixed, with the safety-lamp in his right hand. Engravings at the base are to have suitable inscriptions, heraldic devices, &c., engraved upon them; also the Davy lamp, the Leyden jar, a gas receiver, and a galvanic battery are to be placed on the top of four pedestals at the base of the column. The tower proposed is square in plan, resting on a Gothic base, with the Davy arms cut in relief over the doorway, which leads to the top of the tower by a spiral staircase. Under the super-base, on which the figure rests, is an outside gallery accessible by the staircase, and immediately under the gallery is a landing with a three-light window, and tracery on each side. The monument is proposed to be placed on Lesendjaek-hill, and it is said that the summit will be higher than the top of St. Michael's Mount. The estimated cost of the monument is £2,500, and if the tower be chosen in preference to the column, some £500 more will be required.

Artillery Memorial, Woolwich.—Mr. John Bell has completed the colossal figure of "Honor" for the Artillery Memorial at Woolwich, it is erected on the parade in front of the barracks. The pedestal is decorated with four bronze shields or escutcheons, the casting being of metal from Russian guns. The statue erected in memory of those of the regiment who fell in the Russian war, will not be unveiled until a plan for the ornamental laying out of the space in front of the barracks, including a grand approach, has been determined on. We may note here that by the same sculptor, and among the contributions of the Coalbrookdale Company to the Great Exhibition, will be a bronze female statue of the "Oetoroon," also a bronze statue of "Temperantia," placed under an ornamental open-work metal canopy, covering a polished granite drinking fountain. These statues are both life size.

Herbert Memorial.—Baron Marochetti has met the sub-committee of the subscribers at Salisbury, and selected as the site of the statue of the late Lord Herbert the spot on which the Russian cannon is now placed, in front of the Council-house, provided the corporation will grant the same. The statue, which is to be of bronze, will be 8 feet in height, and will be placed on a pedestal of polished Aberdeen granite.

ARCHITECTURAL ASSOCIATION.

AN Ordinary General meeting of the Architectural Association was held on Friday, at the Rooms, 9, Conduit-street, Regent-street; Mr. PARAIRE in the chair.

Mr. ARTHUR SMITH, Hon. Sec., read the minutes of proceedings at the last meeting, which were approved of and confirmed.

The Library Committee.—Mr. A. SMITH stated that the Committee of the Association had had under consideration the report of the Library Sub-Committee (a copy of which appeared in our impression of the 27th ult.), and had come to the following resolution:—That the report of the Sub-Committee be received and adopted, and the curators be empowered to carry out the same, subject to the following amendment:—That it is not thought expedient at present to withdraw as much as £10 from the funds of the Association, but that half of the amount should be provided out of the funds, and the remaining half be raised by voluntary subscriptions amongst the members.

Mr. SMITH moved the adoption of the report.

Mr. PARAIRE seconded the motion, which was unanimously agreed to.

New Members.—The following gentlemen having been balloted for, were duly elected members of the Association:—Mr. George Twigg Molecey, 20, High-street, Eccleston-square; Mr. Ernest Turner, 33, Bermondsey-square; Mr. Frederick Brooks, 9, Grafton-place, Euston-square; Mr. Edward Lyman, 25, Koppel-street; Mr. Alfred J. Little, 34, Eagle-street, Red Lion-square.

A Few Days at Chartres and other French Towns.—The discussion on Mr. Blashill's paper, "A Few Days at Chartres and other French Towns" (which has been published in the BUILDING NEWS), was resumed by Mr. PARAIRE, who made a number of diagrams on the black-board, referring to peculiarities in French buildings referred to by Mr. Blashill in his paper, and showing the differences of method followed by our Gallie neighbors as compared with the practices adopted in this country.

Mr. Paraire was followed by Mr. BLASHILL, Mr. SPIERS, Mr. NEW, and Mr. C. H. F. LEWES, and others, all of whom applied themselves with vigor to the use of chalk and the black-board.

At the close of the discussion a vote of thanks to Mr. Blashill was carried by acclamation.

The Exhibition of 1862.—The Hon. Sec., Mr. ARTHUR SMITH, announced that he had received a letter from the Sub-Committee of the Fine Arts Department of the International Exhibition of 1862, setting forth the regulations under which they would be prepared to receive such works of art, models, &c., as might be presented to them for inspection, the same to be forwarded to the South Kensington Museum, and, in case of being accepted, the works to be delivered at the Exhibition building not later than the 30th of March.

Shortly afterwards the meeting separated.

THE HORTICULTURAL GARDENS.

SIR C. P. PHIPPS, by command of her Majesty, has written the following letter to the Horticultural Society:—

The Queen has directed me to inform you that it is her Majesty's wish that the Horticultural Gardens should be considered as under her peculiar and personal patronage and protection. The only consolation that her Majesty can hope to find for the rest of her life, under her bitter and hopeless bereavement, is to endeavour to carry out the wishes and intentions of her beloved husband. The Queen well knows the deep interest that he took in this undertaking, and would wish to have periodical reports sent to her Majesty of the progress and proceedings of the Society.

Sincerely yours,

C. D. PHIPPS.

ON THE CONSERVATION OF ANCIENT ARCHITECTURAL MONUMENTS AND REMAINS.*

IT may, perhaps, appear that I should offer some apology for occupying your attention this evening with a subject at once so trite and so uninviting as that which I have chosen as the title of this paper. If so, I would say in reply that it was intended for our opening meeting, and that those meetings seem to me to demand, as the leading subjects to be discussed at them, matters of vital importance to our art, rather than of an amusing or highly interesting character, and that I hold the subject I have chosen to be, however trite, one of the most pressing importance.

I assume as my starting-point that every member of this Institute appreciates the immense value, to any country which possesses a history and a civilisation, of the monuments and remains by which that history and civilisation are illustrated.

The value of such monuments of the past is great enhanced when they illustrate the rise and development of a special style of art; still more so, when that style of art is one of great and acknowledged merit, and yet more than all when it is one which has proved worthy of revival and re-development.

Those among us whose taste and education have led them to a more especial appreciation of the art of the ancient world, will feel how strongly these remarks apply to the precious monuments and relics of Greece and Rome, and of the countries over which their arts and influence extended. These illustrate a history and a civilisation the most wonderful in its character; they illustrate also the development of a style of art, the merits of which no one has ever presumed to question, and which has been revived and re-developed in more recent ages; and, as a natural consequence, every relic of these arts, however fragmentary or obscure, is searched out, delineated, and, when possible, protected and preserved with an amount of zeal and assiduity proportioned to their importance, and which does honor to that modern civilisation which so keenly appreciates and rejoices in that of the past.

Should not, however, the same feelings and the same care, zeal, and assiduity, be extended to the monuments of our own race and our own country? Have we not a history as glorious and, to us, at least, as interesting as that of the great nations of antiquity? Have we not a civilisation as noble as theirs?—and should not the monuments which illustrate that history and civilisation be as precious in our eyes as those of Greece or Rome?

Added, however, to the value which these remains ought to possess in our eyes as Englishmen; they possess *intrinsic* claims parallel to those of the works of the great nations of antiquity. They illustrate the development (and especially our own share in it) of a style of architecture as marked in its character as theirs, and the merits of which, though long neglected, are now appreciated and acknowledged by most of us, and have, just as in the case of the Classic styles, led to its revival and re-development.

Let it be clearly understood that I am entering upon no controverted questions: I am instituting no comparison between the intrinsic merits of the two phases of art, nor asking any assent to more than the *fact* of their revival. On all such questions we may hold our individual opinions, and yet may all agree to what I wish to lay down as the groundwork of what I desire to say this evening, that our architectural monuments possess claims upon our care and conservation precisely parallel in their nature to that which we accord to those of classic antiquity, but with these two preponderating points in their favor—that they are our own monuments, and that we are the parties responsible for their conservation.

I would next bring under your consideration the melancholy fact that, though our country is studded with these relics of the past, they are every year being reduced in number, and that those which remain are constantly subjected to the danger of destruction or deterioration from many different causes, among the chief of which I may enumerate—

I. Natural decay and dilapidation, which are greatly enhanced by the destructive climate to which they are exposed, and still more by neglect.

II. Wilful destruction and ruthless mutilation, together with alterations suggested by the passing requirements of the day or by individual caprice.

III. The yet more destructive inroads of *over restoration*.

These three causes, or classes of causes, threaten, in a degree so imminent and so alarming, the existence, the integrity, and the authenticity of our ancient architectural remains, that I feel it to be high time that this Institute, together with all local architectural and antiquarian societies, should take it into their serious consideration, both severally and jointly, what measures can be adopted to arrest the evil before it be too late.

Our ancient architectural remains may, for the most part, be classified under the following heads:—

I. Mere antiquities, such as Stonehenge, the Cromlechs, and many of the remnants of Roman structures, though the latter often contain objects of art, as mosaics, pavements, &c.

II. Ruined buildings, whether ecclesiastical or secular, such as abbeys, castles, &c., &c.

III. Buildings still in use, as churches, houses, inhabited castles, &c.

IV. Fragmentary remains embodied in more modern buildings, such as those which usually exist within the precincts of cathedrals, and often in old houses and country mansions, to which class may be added a vast amount of interesting and valuable fragments, mainly of domestic architecture, and often, though of a simple and even rustic character, of great practical importance to the student of our old architecture, to be found among our country villages, and in the scattered houses of the farmers and the peasantry, as well as other miscellaneous remains.

On the first of these classes, that of a purely antiquarian character, I will not trouble you with any remarks, as I think that our antiquaries are sufficiently alive to their value, and exercise a wholesome vigilance in respect of them. It is not in general this class of ancient remains which is most in danger, though it behoves every one who has it in his power to do his very utmost for their preservation.

The second class, however—that of ruined structures—is one which demands much and careful consideration, and it is one towards which the salutary vigilance of our Institute and of kindred societies might, with great advantage, be directed.

The very condition of a ruin, of necessity involves liability to rapidly increase—

ing decay and the probability of speedy destruction; and it so happens that two great events in our history, the dissolution of monasteries in the sixteenth century and the dismantlement of castles in the seventeenth century, have reduced two important classes of architectural edifices to this hopeless condition.

As regards ruined castles, it fortunately happens that the massiveness of their construction enables them, in many instances, to offer a fair amount of resistance to the elements, and that the simplicity of their architecture causes them to lose less from mere decay than structures of a more decorative kind. Such is not, however, always the case, and I would most strongly press upon those who have the charge of these stern historical relics to guard them against the effects of time and mutilation, and upon antiquaries and antiquarian societies to make periodical examinations into their condition, and to advise their proprietors as to such timely works of repair and sustentation as may arrest the hand of time without tampering with their antiquity; and if their natural guardians refuse the necessary protection, to raise funds by private subscription for the purpose.

When we come, however, to ecclesiastical ruins, the case becomes infinitely more pressing. Unlike the great works of defence just alluded to, these edifices were not erected with a view to resisting any but the ordinary causes of destruction to which buildings are subjected. Their structure is comparatively light, and in principle trusts for stability to the nice equipoise of arches and abutments, and pre-supposes the protection of a roof. It is, therefore, a matter for wonder that after more than three centuries of exposure, unroofed, and uncared for, and though often used to supply materials for surrounding buildings, their ruined forms should in so many instances have reached our time in a condition, which enables us in any degree to appreciate their merits or their design.

Happily, however, though great numbers of them have ceased to exist, very many precious remains are left to us, and these, instead of being like those of castles, stern and almost forbidding in their undecorated grandeur, are for the most part, exquisite and highly finished architectural productions, equally valuable and equally beautiful with our glorious cathedrals; and in their own phase of art as classic and as perfect as the remains of antique art which we so much cherish.

Now, the two points to be considered are, 1st, can we expect these precious fragments to endure much longer; and if not, what can we do to promote and prolong the continuance of their preservation?

On the first question I fear that the reply cannot be very satisfactory. Those who have for any considerable course of years been in the habit of revisiting any particular ruin, can scarcely fail to have observed how sensibly and how surely the course of decay, disintegration, and downfall has progressed, even where there has been no deliberate mutilation.

The decay of the surfaces seems to have of late years, redoubled its speed. I have revisited buildings, and particularly ruined buildings, where 20 years earlier I had been able to make minute sketches of delicate carved work, and found the carving now become unintelligible. In many of the best preserved ruins we find the surfaces of the mouldings and carving covered with an ever-fresh pulverescence. If you visit a building in this exposed condition after a hard winter, you are sure to find fresh spots where the details have fallen off through the recent frost, and in every ruin there occur, from time to time, slips and downfalls of greater or less importance, showing that, long as they have resisted the assaults of time and weather, there are limits to their duration, and that those limits are by no means distant.

How many of our ruined buildings have lost large portions within the memory of man! The Abbey of St. Augustine at Canterbury has lost its great tower within no very distant period, and I myself remember the newspaper notice of the fall of the central tower of Whithy Abbey carrying away with it large portions of the surrounding building; indeed such downfalls, if their statistics could be collected, would be found to reach an alarming number and amount, while the silent and yet more fatal progress of decay, is every day and every hour eating into the most beautiful and most precious architectural details.

And how could it be otherwise, when walls constructed of small stone and rubble work are exposed, with no protection but ivy and wall-plants, to the constant action of the most destructive of climates; when every shower penetrates the crumbling mass, and every frost has its full swing in its disintegration, and even the more solid stone, from being kept in a constant state of saturation with water, has every cause of destruction in full and continued operation upon it,—and all this for centuries together?

Nor have these been the sole agents of destruction. Many, indeed the great majority, of our noblest abbey churches, and even some cathedrals, have been taken down for the value of their materials, and those which were left as ruins were, for the most part, spared more because there was no market for their material than for any care for their preservation; and it naturally follows that they would become the quarries which would supply all the petty buildings around them.

Perhaps the most remarkable case of this is at Reading, where the walls of the abbey have been stripped of their ashlar, both without and within, and the rubble core only left; yet such is its extraordinary strength that it still holds together in perfectly solid and compact masses; and where fragments of the tower long since fell they remain to this day, protruding from the ground at the same angle at which they first reached it, and look like masses of rock cropping out of the earth.

This has been continued in many instances up to our own day, and even now it is occasionally found in a certain degree to hold good, as at Easby Abbey, in Yorkshire, where the lower part of the buttresses appear to have been comparatively recently pulled down, as being the parts most easily got at, while the upper stages, being out of reach, are left unsupported and dragging over the walls which they were built to stay.

For the most part, however, it is neglect and the want of timely care which we have now most to complain of. I heard the other day of a considerable portion of a ruined abbey in Norfolk falling down, and this on the property of a great lord, who, I am sure, would have taken proper precautions had his attention been called to it by anyone qualified to give an opinion. The proprietors of these melancholy, yet glorious, remains, though valuing and caring for them as picturesque ruins, frequently seem to forget their value as works of art, and to prefer risking their falling to pieces bit by bit to the trifling interference with their picturesque effect, which would be incurred by a little timely reparation.

Now, what I wish to bring before you as the practical result of what I have been saying, is the absolute necessity for such reparations if we desire to hand down these precious architectural relics to our successors. In defining what the nature of such reparations should be one may use the words of Mr. Ruskin:—

* A paper read by G. G. SCOTT, Esq., before the Royal Institute of British Architects.

* Take proper care of your monuments, and you will not need to restore them. *
 Watch an old building with an anxious care; guard it as best you may, and at any cost, from the influence of dilapidation. Count its stones as you would jewels of a crown; set watches about it as if at the gates of a besieged city; bind it together with iron where it loosens; stay it with timber where it declines; do not care about the unsightliness of the aid; better a crutch than a lost limb; and do this tenderly, and reverently, and continually, and many a generation will still be born and pass away beneath its shadow. Its evil day must come at last; but let it come decidedly and openly, and let no dishonoring and false substitute deprive it of the funeral offices of memory.

The first objects of such reparation are—protection against the penetration of water into the walls; support, to prevent downfall, from the failure of foundations, abutments, or the sustaining work, whatever it may be; and, lastly (if such a thing be found to be practicable), the preservation of the architectural details by some indurating process which will arrest their decay.

None of these need, if judiciously carried out, materially or permanently affect the picturesqueness of the ruin; and I need hardly say that they must be so done as in no degree at all to infringe upon the authenticity and genuineness of the work. The case is wholly different from *restoration*—*protection* and *preservation* being the sole objects.

It would, however, be dangerous even for such works as these to be carried out by ignorant persons. They demand the careful vigilance of the antiquary and the architect to see that the value of the remains is not injured.

It seems to me that there ought to be a kind of *Vigilance Committee* appointed for every district by our Institute, in conjunction with antiquarian societies, whether general or local; that these committees should not only themselves take every opportunity, whether collectively or by their individual members, of inspecting every architectural ruin within their district, but should take public measures for inviting information and suggestions respecting them; that they should, from time to time, report to the proprietors of such remains, and suggest what reparation is needed; and that they should take measures for obtaining funds for them when they find that such aid is necessary. They should also obtain permission to direct what is to be done, and to have a veto upon anything which would be injurious.

For protection against the admission of wet from the top of the walls, much could be done by coating them roughly on the parts invisible from below with a concrete of cement and fine gravel; by re-setting loose stones in cement, by filling in with the same material cavities and open joints, cracks, &c., always taking care, so far as possible, to do this in a manner little, if at all, visible from below. In extreme cases, where arches threaten ruin, it may be desirable to go the length of erecting centres below, and rectifying them, and filling in the joints with cement.

When any large mass of a wall threatens to fall, shores should be applied, the foundations examined, and strengthened if necessary, loose stones keyed in, open joints filled, and, in very bad cases, bonded; but this should be done under the eye of a person who has a feeling for the work, both on its own account and as a picturesque object, so as to avoid any unsightly tampering with the old work. The only cases where such is necessary seem those in which the shattered piers or walls are insufficient for the weight they have to bear; in such cases they must be underbuilt, buttressed, or propped, in some way. Here it will be better to make the new work rough, and of old materials, but in no degree to mask it, but rather to make it manifest that it is only added to sustain the original structure.

It is clear that in such cases it will be best to call in an architect, provided he is one who has an earnest care for the conservation of the work, and a full appreciation of the value of its authenticity.

I may here mention that the west front of Crowland Abbey, which threatened immediate fall, has been of late rendered, as I hope, permanently secure by means of repairs such as those above suggested, carried out under the influence of the Lincolnshire Architectural Society.

The importance of applying to the finer details a preservative and indurating solution, if such is to be found, is almost as great as that of the upholding of the masses; the pulverisation of the surface seems in many cases to be going on at a constantly accelerating pace, and threatens the speedy loss of the true forms of the mouldings and the sculpture. At Fountain's Abbey—perhaps the best cared for of all these remains—I have observed the constant degradation of the mouldings from this cause; if we could save them by such a process, it would be worth anything.

In the interior of Westminster Abbey I am gradually indurating the mouldering stone in its present state, and securing it (as I hope) from further decay, and it is not unreasonable to hope that a process will be found which will do the same for external work.

Besides, however, doing what is possible for the conservation of these invaluable remains, we ought also to see that there is no part of them which has not been thoroughly and carefully represented and measured.

I think a society ought to be formed, or a united effort made by different existing societies for the perfect delineation of our ruined buildings. A good deal has been done by Mr. Sharpe, Mr. Potter, and a few others, but the thing has never systematically been taken in hand.

Now that we understand and appreciate the value of the remains of our ancient architecture, it is a standing disgrace to us that we allow them to remain without perfect and authentic illustrations being made of the whole and of every detail, and where it can be done without disfigurement and without endangering the tender and pulverising surface, casts should be taken of every carved and sculptured portion, which should be deposited in some permanent national collection, with a full description of the parts to which it belongs.

Photography may also be most usefully brought to bear upon the subject, but must not be implicitly trusted to, on account of the uncertainty of its duration; but, whatever the modes adopted, it will be monstrous if we allow the most valuable of our ancient architectural remains to become disintegrated and their exquisite details lost without having placed upon record perfect and absolutely authentic representations of every portion of them.

Let us prolong their existence to the utmost limit, but at the same time provide against their dissolution by perpetuating their designs in some form which will exist after the glorious originals have passed away or become unintelligible from decay.

I now come to the third class of ancient remains—buildings still in use.

Here we come at once within the regions of controversy, of animadversion, and regret; for here we have united in one all the causes of destruction and deterioration—natural decay, neglect, wilful destruction and mutilation, and the now so prevalent operation of *over restoration*.

I must beg, before I proceed, that it may be clearly understood, that, in any criticisms I may express on the course followed by others, I do not wish or expect to exempt myself from equal blame where I deserve it. *We are all of us offenders in this matter*; and to abstain from speaking plainly lest we should be ourselves blamed, will be a course at once cowardly, and treasonable against those principles which one every day more strongly sees to be right, however conscious one is of continual departure from them.

In speaking of ruined buildings, I have fully and cordially adopted Mr. Ruskin's principle of mere *sustentation*. For such remains it is clearly right. This, however, cannot be strictly acted upon in dealing with churches and other buildings still in use.

Viewing them solely as original architectural remains, one would desire, were it possible, that the same abstinence from all but mere upholding should be applied to them; but, in the first place, it is clearly wrong to treat the houses of God as mere architectural specimens to be stereotyped in their present state of mutilation and decay for our study and instruction; nor, if it could be proved right, would it be possible to convince their guardians that such a course should be followed; nor in the case of houses and other secular buildings, to induce people to inhabit and make use of ruins to gratify our sentiments towards them.

It may, then, be laid down as an absolute certainty that buildings whose use is continued must be kept in or put into a seemly state of reparation; and it is, therefore, both our duty and our interest, instead of opposing what cannot be prevented, to do our best to lay down laws for ourselves, and suggest them to others as guides in carrying out the works which of necessity must be done.

The great principle to start upon is to preserve the greatest possible amount of ancient work intact; never to renew a feature without necessity, but to preserve everything which is not so decayed as to destroy its value as an exponent of the original design; never to add new work except in strict conformity with the evidences of its original form; never to mask over or smarten up old work for the sake of making it conformable with new, never to "restore" carved work or sculpture, but leave them to speak for themselves; and, generally, to deal with an ancient work as with an object on which we set the greatest value, and the integrity and authenticity of which are matters which we view as of paramount importance.

These principles are, however, much more readily laid down than acted upon; so much so, that to one who holds them the process of restoration is one of continual disappointment, vexation, and regret; for, labor as you will to act up to first principles, innumerable hindrances stand in the way of their realisation.

Sometimes the stone is found to be so utterly disintegrated that it is with the utmost difficulty—here a bit and there a bit—that you can trace out by laborious study what were the original details; and to attempt to keep these bits seems as hopeless as to preserve a body which falls to dust as you look at it.

Sometimes, when this is by no means the case, a barbaric builder, or clerk of works, or an over-zealous clergyman interferes in your absence, and destroys the very objects you have been most laboring to preserve.

A conscientious representative having been blamed for incurring extras in one place, makes up for it in another by introducing, before one is aware of it, a sweeping clause, which condemns quantities of work one meant most religiously to preserve; and, from one cause or another, one is always finding one's intentions more or less frustrated.

Still, however, this is better than acting on no principle at all, or rather, as is too often the case, acting on the principle of preserving as little as possible, and renewing as much as possible.

To labor hard for the right principle, with whatever amount of shortcomings, must be better than openly to advocate and act upon those which are directly wrong.

However this may be, there is no doubt of the fact that our churches and old buildings are everywhere losing their value, through misdirected and reckless, or at least *overdone* restoration; that it is high time that some public protest be made against it, and some course adopted for its prevention, and that each of us in our own practice should institute a rigorous examination as to what he has done and is doing, with a view to a stern falling back upon true principles; that the churches yet unspoiled may yet be saved.

Here again, I would suggest the Vigilance Committee already hinted at. It could do much, though the works in this case are so many and so widely spread that it seems impossible for all to be watched.

After all, then, we must look to the architects employed. If they will not labor in the right direction I fear there is but little hope, and yet, without some stern supervision, I believe that the majority of them *will not do so*; and, further, that they will always be able to adduce such plausible and practical reasons for their destructiveness, as to convince their employers that they are in the right.

I am, however, very uncertain whether we do not all go upon a very wrong principle in our dealings with ancient churches. I could almost wish the word "*restoration*" expunged from our architectural vocabulary, and that we could be content with the more common-place term "*reparation*." We have got into the way of assuming that the "*restoration*" of a church must, in its own nature, be the signal for pulling it to pieces from top to bottom. Not only must substantial repairs be attended to; the foundations underpinned, the strength of the walls looked to, decayed timbers spliced or new ones here and there inserted, the most decayed stones carefully cut out and replaced, the covering made reliable, and the fittings put in seemly order, following and retaining every remnant of what is ancient, the stonework cleaned from its thick coatings of whitewash, and the roofs divested of the concealment of modern ceilings; but, beyond all this, *everything must be modelled with*; the seating all taken up, floors removed, plastering stripped from the walls, the whole church left for some months at the mercy of the elements by the removal of its roofs, windows which do not please the clergyman or the squire replaced with more pretentious ones; indeed, the whole thing overhauled, and *radically re-formed* from top to toe.

We all of us, however conservative our views, adopt something approaching to this as the normal and necessary view of a restoration; and the chief difference between us is, that, if the architect be at heart earnestly conservative, the church comes out from the ordeal with a certain amount of its ancient self remaining, but with very much of a new garb, or very much of its ancient look, and very many of its interesting ancient features gone; but if his feelings are not conservative so much the more of novelty is there instilled, and so much the less of antiquity retained in the restored church.

Now this is really beginning to tell in a fearful manner upon the value of our ancient churches and the interest with which one visits them. One perfectly

longs after an untouched church, though one knows that the state of them is by no means such as a man of feeling can look at without shame.

Still in them are found our old churches as they have been traditionally handed down to us. True it is that the exterior is in part decayed and mutilated, and even disgraced by barbaric alterations, yet one feels that the old work which remains is genuine and untampered with. True, the interior is coated with whitewash, thickened out indefinitely by the repetitions of centuries, but beneath it we know that the old stonework is as the very workmen left it, and that if carefully scaled off with one's knife we shall find the distemper decorations of, perhaps, two or three periods in its thickness. True, the roof is decayed, patched, and, perhaps, hidden by a plaster ceiling, but we know that its timbers were wrought by the very men whose architecture we are studying, and that it is of the utmost value as an original specimen of their work. The floor, it is true, is sunken, worn, and patched with brick, but it contains the half-effaced memorials of those who lived while the church was new, and when parts of it were being built; and in certain corners remain the ancient encaustic tiles. The windows, again, are filled with patched and irregular glazing, but in the heads of the lights are remnants of the stained glass which once filled the whole. The bells are, perhaps, cracked, yet on them you will find the beautiful fretted border, and the pious, though it may be superstitious, legend.*

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting was held in the rooms, 9, Conduit-street, Regent-street, on Monday evening, when there was a very numerous attendance. The chair was occupied by the President of the Institute, WILLIAM TITE, Esq., M.P., F.R.S., &c.

Mr. LEWIS announced several donations, and a vote of thanks to the donors was passed.

The late Prince Consort.—*The Great Exhibition Building, &c.*—The CHAIRMAN said the ordinary meetings of the Institute had been interrupted by that accident which had cast gloom and universal grief throughout the country—he referred to the death of his Royal Highness the Prince Consort, who had particular claims upon them; being their patron. The Queen was originally their patroness, but a year after their marriage the Prince Consort did them the honor of becoming patron, and they were one of the, perhaps, very few societies the Prince personally visited, and on one occasion he took the chair. On that occasion, and on all other occasions on which he had met him, the Prince Consort conducted himself with that condescension, warmheartedness, and practical kindness that made him so remarkable even at that early period of his career—a native German, ignorant of our feelings, our habits, and our customs. They therefore possessed a knowledge of the qualities of the Prince Consort, and therefore he felt that the Prince was associated with the architecture of England. All topics of eulogium had been exhausted, and he did not know that he could say anything new on the subject. The Council of the Institute felt it their duty, in consequence of the Prince Consort's death, to postpone the meeting which would otherwise have been held on the 16th of December last. The Council also presented, through him, to Sir George Grey, the Home Secretary, an address of condolence for presentation to Her Majesty the Queen. The address was extremely short, and he would ask the Honorary Secretary to read it. [Mr. Lewis, Honorary Secretary, then read the address, which has already appeared in the BUILDING NEWS]. Of that address an acknowledgement, addressed to him, dated Whitehall, 4th January, and signed by Mr. Waddington, had been received, stating that Sir George Grey would take an early opportunity of laying the address before her Majesty. He would mention one incident in his own life, that brought him into particular association with the Prince Consort in connexion with science, and indirectly connected with architecture, that of chemistry. A few years ago it was thought desirable a scientific chemistry should be taught in England, and Mr. Clarke and others conceived the idea of constituting what was now in fact a college of chemistry. Through the attention of Professor Levi notice was taken of Professor Hofmann; it was through that society the services of Professor Hofmann were secured, but that result was chiefly attributable to the instrumentality of the Prince Consort. And he thought the society had thereby done the greatest possible amount of good in a manufacturing country of so much importance as England. In that matter the Prince Consort took the deepest possible interest; he gave his time, thought, money, support, and patronage in favor of that very useful institution. The institution continued for some years tolerably successful, at last the council transferred it to the Government, and now it formed a part of the great institution in Jermyn-street, which was of so much importance to the country. The part which the Prince Consort took in that great school was not generally known; it came to his knowledge, and he felt bound to state that they ought to say they owed eminent acknowledgments to the Prince Consort in that respect. Departing from that subject he came to one which he had been requested by the Council to mention. Lately at the Society of Arts a paper was read on the new Exhibition building designed by Captain Fowke. He and others had protested against the fact of an architect not being consulted on a matter of so much importance as the erection of an Exhibition building. However, there seemed to have been, at the Society of Arts, an attack made on architects, and the Council of the Institute and he himself had received letters asking them to take that matter up. Now, it was the feeling of the Council not to take any notice of that attack—(Applause). The Chairman proceeded to remark that calumny and derision were not worthy of notice, and that they were told not to meet an unwise man in his want of wisdom. Men occasionally rose up and attained eminence even without a professional education. It did not follow that because a man had got an early education addressed to a particular pursuit there was anything gained thereby. Telford was at first a humble mason, then an architect, and then an engineer. But he did not mean to say that if Telford had had a good education he would not have been as good an engineer as he was without it. These things seemed to him to be accidents and incidents showing how men could get on with the greatest trials to get over. Dr. Lee was a great Oriental scholar, though in the humblest walks of life before. An architect was an architect, an engineer was an engineer, and every one knew what it meant, and an Oriental scholar was an Oriental scholar, and everyone knew what that meant. These were reasons why they should not enter into a discussion on the subject of the Exhibition building. Though they had been offered papers about this matter, he thought the meeting

would agree with him that they ought not to take any notice of the papers. As to the ungraceful remarks which had been made elsewhere respecting Sir Charles Barry (some of whose relations he was glad to see before him), they had all to admire the great skill with which that eminent architect wielded his style of architecture, and if in some cases in a building of such enormous extent as the New Palace of Westminster he failed a little, he thought he was not entitled to be held up as the case of a distinguished failure of an architect.—(Hear, hear.) He knew of no man more deserving of their honor, more deserving of the honor of the country and of the profession to which he belonged.—(Cheers.) He thought it was an unfair thing to attack a dead man whose loss they had recently so much to deplore.—(Hear, hear.) So much for that subject. He now wanted to say a word about a memorandum that related to himself. In an artistic journal, having an extensive circulation, he found a most curious incident. They would recollect that in his introductory address at the opening of the session he took some notice of the improvements which had been going on at Paris. In the journal in question a portion of his address was given, and then followed additions which did not belong to him but which still appeared to form a portion of the address and to follow up observations previously made in it. Under the head of *Notabilia* in the journal in question appeared the following:—

“**IS PARIS IMPROVED?**—In the course of his opening address at the Royal Institute of British Architects last Monday evening, Mr. Tite, the President, said that all travellers who returned from Paris were, upon a superficial view of what was taking place there and in almost every town of France, disposed to find fault with the comparatively slow rate at which improvements were effected in London. Within ten years Paris has been, in fact, remodelled throughout, and broad streets, open squares, and fine houses had replaced the ancient, narrow, tortuous dens of filth and impurity. It was to be feared, however, that the real sanitary improvements of Paris had gained little by these changes; and, indeed, so long as the water supply and the sewerage there were conducted on the present systems, little effect could be produced on the infallible test of the value of the sanitary arrangements of a town—the average death rate. He advised those who believed that ‘they manage all these things better in France’ to visit the ‘in-take’ of the Chaillot Waterworks, which was unpleasantly near the mouth of one of the great sewers, or to ponder over the charge he would have to pay, even in a private lodging, for the necessity of an Englishman's life—the daily hip bath. Nor was this all, for the embellishments of the town had resolved themselves into heavy charges on its inhabitants, while the utility of many of the costly works now in hand seemed more than questionable. House-rents had risen to fabulous heights in Paris; the poor were driven from their old haunts, and no refuge was provided for them; while, unfortunately, the sanitary defects of the old houses were servilely reproduced in the new ones. No doubt there was something fairylike in the rapidity and the brilliance of the changes brought about, but these improvements have been effected upon principles of political economy and by an abuse of public credit which would never be tolerated in England.” Up to that point what he said at the opening of the session was very fairly reported, but then followed what was not spoken by him, but which seemed to fit the speech remarkably well and to bear out what he had said. It was,—“Go into the courts of the new houses (when they have any) and see what they are like. Count the windows which take their air and light from them; in some of the worst cases you will find eighty windows looking into a well 20 feet square and 70 feet deep. A more striking example still is furnished by the view from the tower of St. Jacques la Boucherie. At your feet run the Rue de Rivoli, east and west, and the Boulevard de Sebastopol, north and south, each some two miles long and straight on end, excepting where the latter twists across the Place du Châtelet and the Seine. Directly you look over the parapet you are struck by the extraordinary compression of the houses which form these two great streets. Almost everywhere else there is a certain little space remaining between the backs of the houses, but behind the splendid buildings which border these gigantic alleys there is no space at all. The houses are packed back to back; they seem all roof. There is only one comparison possible of the scene before you. You fancy at once that an immense plough has driven a furrow down each of the streets, turning up the houses tight against each other right and left, just like clods in an autumn field. Many of them are simple veneers, one room thick. The average surface of court-yard in the two streets is certainly not one-tenth of the whole area. How could it be otherwise? The land is worth £40 a yard! The air has been taken out of the courts and put into the street; the front rooms have more of it than they had before, but the back ones, which are by far the most numerous, have none at all. Now, as the great majority of the 12,000 new houses, and not a small proportion of the enlarged old ones, are more or less constructed on this plan, can it be denied that their inhabitants pay something more than a simple money price for the changes effected? Is the privation of air and light to be counted for nothing? The Parisians are not toads or tortoises, and cannot live without breathing or seeing. These unhealthy houses have often been attacked, but with no result; their dangers were publicly but vainly indicated in 1857 by the lectures of the Professor of Civil Construction at the Conservatoire des Arts et Métiers, but they go on growing at the rate of thousands a year. Add the certain consequences of this system of lodging to the £319,000,000, and you have the total price of the improvements of Paris.” Who was the author of the latter portion of the extract he knew not, but the incident was a curious one, and he had ventured to notice the matter, though he was not the author of the passage.

Mr. GEORGE GILBERT SCOTT, R.A., then read a long and able paper on the Conservation of Ancient Architectural Monuments and Remains. The first portion will be found elsewhere.

The CHAIRMAN said he would venture to make one or two remarks, which occurred to him in the course of the reading of the paper. Mr. Scott referred to Mr. Ruskin's opinion about the preservation of antiquities; that gentleman did more than give his opinion, he addressed the Antiquarian Society, and forwarded to it a large donation. The Antiquarian Society, on the Council of which he (the Chairman) had the honor of being, took the matter up, and issued a circular addressing the local secretary in furtherance of the object. However, they met with no encouragement on the subject, and after their best efforts were exhausted, the matter had died a natural death. He did his best to prevent that, but was unsuccessful. That being so, he was a little afraid Mr. Scott would not succeed in a more extended attempt. At the same time, he should be very happy to aid him in the attempt, because he felt, as all must feel, the importance in an artistic point of view, of the appointment of some such dominant body as that proposed. One could hardly pass through the country without

seeing that what Mr. Scott said was true. But one felt particular regret at witnessing the condition of our ancient buildings; no one seemed to care for them, and they fell into decay and even disappearance. He knew very strong instances, and amongst them that of the marvellous Abbey of Whithy; he thought in a few years the whole of that abbey would be down, though the expenditure of a little money would have sufficed to save at least large portions of it. No doubt the extremely exposed situation and the very bad material of which a portion of it was constructed, would prevent their preserving its artistic architectural features. He merely mentioned that as an instance of the loss of our ancient cathedrals and castles, where the expenditure of a few pounds would save them. With regard to the vexed question as to the nature of restoration, he had heard much discussion about it, and it was a difficult thing to decide what should be done. But their friend Mr. Scott's suggestions, he thought, were very valuable, showed great experience, and indicated practical utility. What Mr. Scott said was every day becoming more obvious. A paper such as that which had been read that evening, characterised by such practical skill and knowledge and wonderful taste and judgment, would undoubtedly be of great value generally. As to what the French were doing he thought they showed a marvellous skill in their particular style of architecture, though in many cases they were exposed to the charge of recklessness in their treatment of ancient buildings. However, there was much to be said about what had been done to take away the effects of the ravages of time and decay. He dared say the paper itself was of that nature which did not enable one immediately to go into a discussion upon it. With these few remarks, however, he would invite Mr. Burnell to say a few words on a subject to which he had paid great attention.

Mr. G. GODWIN wished to ask, before Mr. Burnell addressed the meeting, whether the moment had not now arrived when the Government would be persuaded to issue a commission for a general examination of ancient buildings, or to obtain reports from all parts of the country, in order to ascertain what buildings had guardians, those which were without attendance, what were under decay, and what not. When Mr. Hume was in the House of Commons, active exertions were made to obtain the appointment of such a commission in this country, and Mr. Hume, who urged in the House night after night the saving of money, saw that money could not be better expended than in retaining ancient structures. It seemed extraordinary that, with all the large architectural and archaeological societies in existence throughout the country, destruction should go on of the most deplorable character. It was desirable that some body should be appointed by the Government to initiate such inquiries as he had referred to, and he thought they would find a disposition on the part of the Government to appreciate the proposal, although Governments had behaved most infamously in regard to art, science and antiquities.

Professor DONALDSON said it seemed to him best to resolve themselves into a practical body to carry out the object of Mr. Scott. And he thought they might approach the First Commissioner of Works to ask him to get a return made out of all ancient monuments under his care. There were several properties, it was found, in process of decay which ought to be preserved, and which it was the duty of Government to preserve. If they asked the First Commissioner to cause such a return to be made, he thought the request would be granted.

Mr. G. R. BURNELL said Mr. Scott's paper related to so many points of interest that he felt incompetent that night to go into the matter, and if it snited the views of the Institute he should prefer postponing what he had to say to a future occasion—(Hear). The paper was full of matters of detail which would have to be fully and carefully considered—(Hear, hear).

The further discussion of the paper was then postponed until such an evening as the Council should appoint.

Mr. DRIGBY WYATT thought they must all feel highly gratified by the paper which Mr. Scott had read that evening—(Hear, hear). Monuments of art were to them one common property as architects, whether in Italy, France, or England; they must feel a common interest in them wherever they might be. He proposed a vote of thanks to Mr. Scott.

Professor DONALDSON seconded the motion, which was carried amidst loud applause.

Mr. SCOTT briefly acknowledged the compliment, and hoped the reading of the paper would lead to some practical result.

New Members.—The following gentlemen were duly elected:—Mr. John Young, Jun., of 35, King-street, Cheapside; as Fellow. Mr. Charles Robert Baker King, of 24, University-street; Mr. Benjamin Taberner, of 20, Bedford-place, Kensington; Mr. Henry Wood, of 12, Richmond-terrace, Clapham; as Associates.

ELECTION OF DISTRICT SURVEYOR FOR CHELSEA.

LAST Friday the Metropolitan Board of Works elected Mr. Sancton Wood as District Surveyor for the parish of Chelsea. There were 23 candidates for the office, viz.: Messrs. Andrew Moseley, John Billing, Richard Richardson, John W. Papworth, Sancton Wood, William Lighty, S. Salter, Jun., Samuel Hill, Sydney Godwin, Thomas Edward Knightley, Henry S. Legg, Horace Field, Joseph Liddiard, Arthur Cates, Edward Roberts, Samuel L. Markham, Josiah Houle, Edward Paraire, Robt. Kerr, Henry Laxton, Arthur J. C. Baker, Alfred Williams, and John Cole. It was arranged that the list should be reduced to six on the first voting. At the close of the first voting the following were the six who had the highest number of votes: Messrs. Billing, Papworth, Wood, Knightley, Kerr, and Cole. Eventually the election fell on Mr. Sancton Wood, which causes a vacancy in the surveyorship of Putney and Roehampton.

CONDEMNATION OF OLD HOUSES IN KIRKALDY.—Since the late sad catastrophe in Edinburgh, the authorities in Kirkalady have been making inquiries into the state of some of the old houses. The result has been that a number have been condemned, and the inhabitants ordered to remove immediately. A number of them have already been pulled down. On the proprietors being made aware of the untenable state of their houses, they got an examination made by practical men, who concurred in the sentence passed by the authorities.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post*. Gold watches 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enables persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

J. W. BENSON, 23 and 34, Ludgate-hill, 46 and 47, Cornhill, London, E.C. Established 1749.

LONDON AND PARIS HOSPITALS.

Galiquan's Messenger reports a discussion which took place a few days ago at one of the sittings of the Académie de Médecine on the relative sanitary condition of the hospitals of Paris and London. Dr. Gosselin stated that from what he had been told by various foreign surgeons, and also by French physicians who had visited foreign hospitals, there existed a considerable difference in the results obtained in the English and German establishments of the kind compared with those in Paris. The sick-wards of the London hospitals were much better aired, being provided with large stoves, which gave rise to draughts and consumed the vitiated air of the rooms; patients who were able to walk took their meals in dining-rooms apart from the sick-wards, an arrangement which greatly diminished the crowded state of the infirmaries, and contributed towards maintaining the purity of the air; the floors were frequently washed, which prevented the accumulation of dust, while the beds had no curtains, whereby miasmatic emanations were better dispersed; and, lastly, the linen department was the object of particular care.

Dr. Davenne differed in opinion from the former speaker, and maintained that the manner in which the Paris hospitals were conducted was far superior to the London system. If the sanitary condition of the latter was better it was owing to the fact that their population was smaller, because the paupers relieved by the poor-tax were not admitted into them. He then quoted some statistical documents to show that the mortality in the Paris hospitals had been constantly diminishing since the commencement of the present century.

Dr. Malgaigne, adverting to an old report of Dr. Tenon's, who had visited the hospitals both of London and Paris, remarked that the author proposed to limit the sick-wards to the ground floor and first story only, every sick-ward containing 24 beds at the utmost. In 1814, he added, the slaughter-houses of Paris were transformed into hospitals, and the results of this measure were curious. The mortality of the French operated on in the common hospitals was one in five, eight, nine; in the slaughter-houses, one in 10, 12, 13. The mortality of the foreign soldiers operated on in the hospitals was one in 7, 13; in the slaughter-houses, one in 10, 19. This showed that the mortality was lowest in the best-aired situations. As to the London hospitals, there was one fact to be taken into account, viz., that the sick admitted into them were much more seriously ill than those admitted into the Paris hospitals. Out of 100 patients operated on in each city, 56 died in Paris, and only 30 in London. Out of 100 amputations of the thigh, 60 ended mortally in Paris, 21 in London, and 19 at Manchester, where the hospitals have the advantage of the country air. Now what was the reason of this enormous difference? Simply, that while in the Paris wards there are as many as 80 beds, there are only 12 in the London ones.

The discussion is likely to be continued at a future sitting.

METROPOLITAN BOARD OF WORKS.

A MEETING of this body was held on Friday last, at the Board-room, Spring-gardens; J. THWAITES, Esq., the Chairman, presiding.

Erection of a Gas Testing House.—The CHAIRMAN stated that it being urgently requisite to have erected as speedily as possible a gas testing-house in the new street in Southwark (under the Sale of Gas Act), the Gas Committee had invited six builders to send in tenders for the same. Five of the gentlemen to whom the invitation was given sent in tenders, which were as follow:—Messrs. J. Wilson and Son, £1,979; Mr. Edward Thirst, £2,015, and £36 for extras; Mr. W. S. Nixon, £1,749, and £38 for extras; Mr. A. E. Robinson, £1,810, and £44 for extras; Mr. W. Downs, £1,835, and £36 for extras. The estimate of the Superintending Architect was £1,450.

After some discussion, the subject was referred back to the Committee, with power to deal with the tenders.

The Board then proceeded to the election of a surveyor for the Chelsea district.

City Improvements.—A report from the Works and Improvements Committee stated that though the improvement now being carried out by the Commissioners of Sewers of the City of London, at No. 60, Great Tower-street, would be attended with considerable public benefit, the Committee, having regard to the fact that the fund at the disposal of the Board for the purpose of metropolitan improvements is exceedingly limited, and to the necessity of their diffusing, as far as may be practicable, street improvements of this nature over the entire area of their jurisdiction, are not at present prepared to recommend a contribution in the above case.

Mr. H. L. TAYLOR moved an amendment against the adoption of the report, that the Board contribute one-third of the cost, or £32 13s. 4d., towards the improvement.

The amendment was, after a long discussion, carried by a majority of 4.

The consideration of a report from the Building Act and General Purposes Committee, on the reference by the Board of the 28th June, 1861, as to the necessity for some immediate legislative provision to prevent the building of warehouses, &c., with iron doors; and submitting suggestions by the superintending architect for the amendment of the Metropolitan Building Act, 1855, was postponed, *sine die*.

Utilisation of the Sewage.—The Board was informed that the Main Drainage Committee had prepared a very long report, stating that the Committee entertain very favorably the proposition for dealing with the sewage of the northern area of the metropolis, contained in the communications from the Hon. William Napier and William Hope, Esq.; and recommending the Board to assent to the principle of a concession of the sewage, for a term of fifty years, provided the requisite authority be granted by the legislature to the Board, and subject to the introduction of all necessary clauses in the Bill for the protection of the Board, and of the public interests confided to them, and for ensuring the fulfilment by the Company of the obligations undertaken by them.

The report was not read, but ordered to be printed and circulated amongst the members, and taken into consideration at the meeting of the Board this day (Friday).

Progress of the Main Drainage Works.—The engineer, Mr. Bazalgette, reported that the progress of the Main Drainage Works during the past month has, on the whole, been satisfactory, although, at this period, the short days and the unsettled state of the weather necessarily retarded all building operations. Mr. Furness has now completed all the brick piers, abutments, and wing walls of the bridges over the rivers, railways, and roads, except the Stratford-road between Bow and Plaistow; and the iron girders and superstructure are being cast and fitted at the founder's, and gradually delivered on the works. The

concrete foundations and brick inverts of the sewers are extending over the whole line of works. At the beginning of last month 45 cross trenches remained to be completed between East Ham and Barking; 30 of these are now finished. These cross trenches have been excavated to a depth of from 12 to 14 feet through the peat, and are fitted with concrete piers at from 20 to 30 feet apart, and on these are constructed brick arches upon which the three parallel tunnels are carried. The value of the work executed under this contract up to the present time is £151,000. Messrs. Brassy and Co. have completed about 19,450 feet of the Middle Level Sewer, at an expenditure of about £91,000, and Mr. Dethick has finished 5,633 feet of the Ranelagh Storm Overflow at a cost of about £26,500. Mr. Webster has now successfully completed about six miles of the Southern Outfall Sewer at an expenditure of £250,000. Messrs. Aird have made considerable progress with the Deptford Pumping-station, the engine-house having been raised 30 feet above the foundations. The Low-level sewer under Deptford-creek is progressing, and the iron pipes under the creek, which will form the connexion between the engine-house and the High-level sewer are nearly completed. The value of the work done under this contract is about £50,000. Under the Southern High-level sewer contract 7½ miles of sewers have been finished at an expenditure of about £138,000, and I regret to report that I am still unable to express myself satisfied with the contractor's mode of conducting those works. Messrs. Slaughter and Co. have so far progressed with the engines and pumps for the Deptford pumping-station that the Board have during the past month felt justified in making them a further advance of £5,000 on account thereof. Although it does not form a portion of the main drainage, I may here mention that of the Southwark and Westminster communication, Mr. Pearson has completed 280 feet of subway, 335 feet of sewer, 40 vaults, and a proportionate number of house drain connexions. The materials and workmanship in the foregoing works are generally of a solid and satisfactory character, and mostly reflect great credit upon the contractors.

NOTES FROM THE PROVINCES.

Ashford Corn Exchange.—This edifice erected on a piece of ground opposite the Cattle-market is now completed. The room, lighted entirely from the ceiling, is 98 feet 6 inches by 48 feet 8 inches, and 35 feet in height. There are also ante-rooms 32 feet by 16 feet, and 16 feet by 16 feet, and some very extensive cellars. The architect is Mr. R. C. May, of St. George's-street, Westminster; and the builder Mr. Perry, jun., of Dalston. The total cost is about £4,000.

Wrexham.—*Offices for the Provincial Insurance Company.*—Says the local *Advertiser*,—"The new offices of the Provincial Insurance Company are now completed. The large office in which the whole of the 'ready writers' are at work, is the finest room in Wrexham. It is large, warm, light, and well ventilated. A strong fire-proof room opening into the large room keeps in the utmost safety all the valuable books, papers, and deeds, belonging to the establishment, the close proximity of which to the general clerks' office greatly facilitates the progress of the general business. The Board-room, the Committee-room, and the private room of the secretary are in front of the building—double windows obviate any nuisance that might arise from the noise of the traffic in the street—and double doors preserve the privacy and ensure the quietude of these rooms on the other side. The same completeness prevails throughout the entire building. There is hot water and cold water everywhere at command, a large hoist to lift up heavy materials from the cellar to the summit of the building, and a smaller one to lift up lighter articles, a telegraph to call the clerks, to point out which clerk is wanted, and to indicate where he is wanted. There is 'a place for everything and everything in its place.'"

The Nottingham Surveyorship.—At a meeting of the Town Council of Nottingham as to the surveyor's salary, it was unanimously resolved that the sum of £250 per annum now paid was totally insufficient, and that it be forthwith increased to £350, and a further amount of £50 to be added after Michaelmas next.

Clifton Suspension Bridge.—We understand that the chains, &c., of Hungerford-bridge, which have been purchased for completing this long-unfinished undertaking, will be delivered in Clifton in June next, when the operation of suspending them between the piers erected on the Gloucester and Somerset sides of the Avon will be immediately commenced.

The New Guildhall at Cambridge.—The improvements at the Guildhall are rapidly approaching completion. The aldermen's parlour and the old assembly-room are available for public meetings and are a striking contrast to their former state. The suite of rooms appropriated to the School of Art are capacious and convenient. The large assembly-room is progressing, the plastering is nearly finished, and the floor will soon be laid.

Abergavenny.—*Bursting of the Canal.*—On Wednesday the 18th ult., the inhabitants of Llanfoist were aroused by the sudden and unexpected bursting of the canal. About eighteen months ago a similar disaster occurred in the same neighbourhood, not more than five hundred yards distance from the scene of the present, which is near Llanfoist Great House. The destruction caused by the flood was very serious, trees of immense size being washed away. The village of Llanfoist was inundated in many places to the depth of 2 feet, and when the water was stopped, the roads were at least 6 inches deep with sand and mud. The park presented a remarkable appearance. The quantities of stone washed down for several hundreds of yards are computed at a thousand tons. Had the breakage taken place one hundred yards above, the Great House would have been in jeopardy. The damage is said to amount to £500.

The New Staff College, Sandhurst.—The erection of this extensive structure is rapidly approaching completion, and the building will, in all probability, be out of the hands of the workmen by the month of March. A few years ago, and subsequent to the Crimean war, a senior department was added to the Royal Military College for officers who, having served a probation in regimental duties, seek by a higher course of training to qualify themselves for staff appointments; but adequate accommodation could not be afforded, and it was resolved that a college for this exclusive purpose should be erected, and about the middle of December, 1859, the foundation-stone was laid by the Duke of Cambridge, with whom it is said the scheme originated. The work is carried out under the direction of Captain Pelly, R.E., who is assisted by E. Bowdler, Esq., of the Civil Staff. The new College is situated on a gentle slope, about half a mile to the eastward of the Cadets' College, and within the spacious grounds belonging to that establishment. The style is modern Italian, freely treated, and the material is brick, with stone facings, the lower part being stone. The length of the main

building is 265 feet, by 110 feet deep (exclusive of internal offices), and its height from the ground about 60 feet. There are towers at the north and east ends, and another in the centre of the front; on a pediment are the royal arms, surmounted by the crest of the college. There will be quarters for 40 students. The interior is approached by a vestibule, leading to a large hall covered by glass, and giving access to the principal staircase and corridors. The hall on the first floor has rows of Ionic columns. The corridors are lighted with large open courts, but these will probably, after a time, be covered in with glass roofs. The principal apartments comprise three large halls of study, two libraries, lecture theatre, class lecture-room, model-room, and mess-room (60 feet by 30 feet), which has been constructed in such a manner that it can readily be made applicable for balls, &c. North-west of the college are detached residences for the commandant and adjutant, and nine houses for professors will be commenced in the course of a few weeks. Attached to the north end of the building are the kitchen and other offices of that description. At the back of the college are stables for 48 horses. The contractor is Mr. Myers.

Chatham.—*St. Bartholomew's Hospital.*—The works on this extensive pile of buildings is being rapidly pushed forward. The building is of brick, with white stone dressings, and may be described as Elizabethan, though no very great ornamentation will be attempted. The hospital consists of a centre building, and two wings, together with a large range of buildings intended as a dispensary, chiefly for the treatment of out-patients, at the rear. In the design of the building advantage has been taken of the sloping character of the ground on which it is built to form the dispensary building. Entering the building at the back the out-patients will be received in a general waiting-room, communicating with which are the surgeries, dressing-rooms, dispensing-rooms, and other apartments. From this portion of the building admission is gained to the ground-floor of the hospital, along which runs a corridor the centre length of the building. The west wing contains the lock wards, together with the usual dormitories and rooms for the nurses on the ground floor, also day-rooms, recreation apartments, bath-room, servants' hall, sculleries, &c. In this part of the hospital are the cooking-rooms, stoves, &c. The east wing contains the charity wards for the reception of general patients, the wards being the same as those in the corresponding wing. It also contains a day-room 54 feet in length, for the use of convalescents. Ascending to the first floor, with which the entrance from the New-road communicates, the centre building contains an entrance hall, communicating with which are the house surgeon's apartments, chapel, and, on the opposite side of the corridor, the dispenser's rooms. On this floor, in the west wing, is also another lock ward 57 feet in length by 24 feet in width, and in the corresponding wing on the opposite side of the building a charity ward, 90 feet by 24 feet. This floor also contains wards for special cases, together with steward's rooms and apartments for the nurses. The centre building on the second floor contains the board-room, matron's rooms, and apartments for the hospital clerk. The operating-room and lecture-room are placed at the rear, over the dispensary building. The wards and other apartments on this floor correspond with those in the other parts of the building. There is likewise a third floor to the centre building, which will be used entirely for the general stores required in the establishment. At the point where the east wing joins the centre building it is intended to erect a lofty square tower, which will rise to a height of nearly 50 feet above the building. This tower will contain a cistern for the water supply for the hospital, and a clock, with four illuminated dials. The hospital is expected to be finished very shortly. There will be accommodation for one hundred patients.

Hospital for Birkenhead.—Mr. John Laird, the new member for Birkenhead, has offered to build an infirmary and hospital for the new borough, including Birkenhead, Claughton, Oxtan, Tranmere, and Bebington, at a cost of £3,000, and the committee have accepted the terms of his proposal. Mr. Walter Scott is to be the architect of the new building.

New Lighthouse on the Clyde.—The improvements on the channel of the Clyde between Greenock and Dumbarton have necessitated the erection of a new lighthouse on a perch opposite to Port Glasgow harbor, about 300 feet from the shore. The new lighthouse is of iron, circular shaped, 11 feet in diameter, and resting on a circular ashlar foundation. The lantern is about 6 feet in diameter, and is covered by a copper dome, the whole rising about 30 feet above high-water mark. Within the last few days it has been successfully lighted with gas, which is conveyed from Port Glasgow through a pipe sunk at the bottom of the river, and as the gas can be turned on and off in Port Glasgow, there is no necessity for constant attendance in the lighthouse, a man only requiring once a day or so to wipe the reflectors and the glass of the lantern.

Colchester Camp.—The plans for the erection of the first section of the new cavalry barracks here have now been definitely determined upon, and the tenders for the work are to be sent in. The erections for the men are to be of red brick, two-storied, and to be formed in blocks, each for the accommodation of seventy-two men. The rooms, which will be about 20 feet in length, are to accommodate in each eighteen men. The officers' quarters will be three-storied.

CRYSTAL PALACE FOR THE PARISIANS.—We understand that a *société anonyme*, with a capital of 25,000,000 francs, is in course of formation for constructing a "palais de crystal" in the Bois de Boulogne. The council of administration comprises a number of gentlemen well known both in France and in this country, the French portion including the Marquis de la Roche-Aymon, Count de Santivy, the Marquis de Monclar, M. Pasqualini, and Prince A. Galitzin; and the English portion, Messrs. S. Beale, M.P., T. N. Farquhar, and William Jackson, M.P. Sir Joseph Paxton has accepted the office of architect in chief; Mr. Edwin Clarke that of consulting engineer; and Mr. Thomas Brassy that of contractor-general. It is intended to make the Crystal Palace of the Bois de Boulogne especially attractive by concentrating within it magnificent halls for public entertainments, and a vast nave for the exhibition of fine arts, manufactures, and horticulture. The exhibitions will be permanent, and it is anticipated that new intercourse will be created between producer and consumer unbarren by intermediaries or by distant and uncertain correspondence. To provide for the general expenses the sinking fund and the maintenance of the building, &c., there would be the rents from exhibitors, the rents of restaurants, cafés, &c., the commission on the sale of pictures, statues, objects of art, and flowers, the reserved seats, and the rents for advertising placards, so that the entrance money will represent the profit to the shareholders, which it is considered will be equal to 30 per cent. on the capital.

Reviews.

Gothic Memorials. By W. C. Brangwyn, Architect, Compton-road, Wolverhampton.

OF which the first part is before us; consists of twenty plates, drawn by the author and printed at the Anstatie press of Cowell, Ipswich. The work is described as intended to contain sundry sketches for mural monuments, headstones, crosses, &c. The designs are not all of equal merit, but several are rendered more valuable by the introduction on the plates, of sections and sketches of details to an enlarged scale.

The Royal Engineer Department: Its Work and the Estimates. By Argus; Hardwicke, 102, Piccadilly.

WITHOUT going quite to the extent that "Argus" does in his attack on the Department, we agree that it would

Be an interesting inquiry on the part of some member of the House of Commons to call for a return of the fortifications constructed within the last ten years, the names of the engineers who drew the plans, the amount of the estimate on which the money was granted, the amount of the accepted tender, and the actual sum or sums paid for each work up to the time of its completion; and what portion of these works have had to be taken down or have become obsolete by the scheme proposed by the Defence Commissioners.

It is said that—

The Defence Grant is being expended on a German system of fortification, rendered obsolete by modern improvements in the mode of attack. We have ill-ventilated casemates, counterarched revetments, the substitution of caponiers, and detached Carnot works, as if all modern artillery was to be superseded by the primitive weapons of our ancestors.

The author does not desire to question the intelligence, honor or courage of the officers of the Department, but protests against their being employed on works unless they are fully qualified for the duty, and remarks that—

It is now well known that all War Department works are really superintended by broken-down civil engineers, architects, or builders, to whose necessities circumstances rather than the remuneration, the Government are indebted for their services, and who, under the title of clerks of works, perform the duty which the public suppose to be performed by the officers of Royal Engineers; and it is worthy of remark, that no puppet showman ever takes so much care to conceal the hand which pulls the strings as the officers of Royal Engineers, to hide the clerks of works from public view. But as in the best performance a glimpse may be caught of the real actor, it has been the policy of the Royal Engineers to so bespatter the civil officer with dirt, that his recognition in public will be rendered improbable; and also introduce men of inferior position and attainments into the service, with the view of depreciating it in the estimation of the authorities and the public.

Report of the Council of the Art Union of London.

THE annual report of this Council shows a falling off in the subscription list during the past year, attributed in some measure, to the depression in trade, &c., and also to the fact that several other projects with the same end in view, now bid for the patronage of the public.

The Council state that they do not of necessity regard those projects in any inimical spirit so long as the means employed are judicious and legitimate, they are glad to see others exerting themselves to forward the same cause in which they have long labored.

Subscribers for the ensuing year will each receive an engraving by Mr. Sharpe, from the picture by Mr. F. Goodall, A.R.A., called "Raising the Maypole."

It is further mentioned that the council have presented a memorial to Government, "praying for the adoption in the several galleries and museums of the nation, of the uniform plan of opening them to the general public every day in the week except Sunday, but with a charge of sixpence for each person (except students) on Thursday and Friday. They hope that this proposed may be entertained, and the plan fully adopted by the time of the opening of the International Exhibition, so that the visitors to London both native and foreign, may have the benefit of the removal of the uncertainty now caused by the conflicting rules for admission observed at the different national collections." It is not easy to understand why a charge of sixpence should be made on two days in the week for admission to our present free exhibitions.

The Art-Union of London Almanac.

APPEARS in a newly designed cover of Gothic character. It contains information in a very condensed form on art societies and exhibitions, collections of pictures, and some other matter now almost peculiar to almanacs.

The Practical Mechanic's Journal.

THE January number of our contemporary contains a paper on the Annealing Temperature of Metals and Crystallisation produced by Vibration, an account of the machinery of the *Octavia* and the *Mooltan* steamers. An article on Inventions and Protected Patents; another on Subterranean Railways in the Metropolis; descriptions and illustrations of Patents; Law Reports of Patent Cases, and some usefully brought together "monthly notes," &c.

Correspondence.

WHAT IS AN ARCHITECT?

SIR,—Will you kindly allow the following to appear in your Journal? It would have been written before, but I was in hopes that some one better able than myself would have written to you on the subject.

At the Society of Arts on the 4th ultimo, during the discussion which followed the reading of a paper by Captain Phillips on the Building for the International Exhibition this year, Mr. Henry Cole said "when the Royal Commissioners for 1862 entered upon their functions Captain Fowke had plans ready." Can Mr. Cole state how it was that Captain Fowke happened to have plans ready? Who commissioned Captain Fowke to have these plans prepared? Did he have them prepared at his own expense, or was the expense charged to the vote for the Department of Science and Art, and, if so, by whose authority? And if Captain Fowke was commissioned to have plans prepared, why was he, and he only, selected?

I wish to be careful as to the difference between *preparing* and *having prepared*, because I should be sorry to charge Captain Fowke with the design for the Exhibition. The credit of the design now in question belongs to some of the very numerous architectural assistants who are employed under Captain Fowke, at Kensington—as in all other cases where military Engineer officers are engaged on civil duties.

AN ARCHITECTURAL ASSISTANT.

IMPROVEMENTS IN BUILDING, &c.*

IN THE CONSTRUCTION OF ARCHES OR OTHER CURVED STRUCTURES, MADE BY BRICK, STONE, OR OTHER MATERIALS.—Dated June 3, 1861.—J. D. Davidge.

This consists in making two sides of one of the pieces to be used in the construction of a double wedge shape, pointed at one end, and square at the opposite end. The inventor also forms the two sides of another piece to be used in the construction of corresponding alaps to the sides of the aforesaid double wedge shape piece, so that, when two or more of such pieces are fitted one against the other, and an arch or other curved structure built therewith, the same shall be self-supporting, and when put together with cement form a very strong piece of work.

IN THE CONSTRUCTION AND INTERNAL ARRANGEMENT OF FURNACES, AND IN THE PREPARATION, MANUFACTURE, AND TREATMENT OF CLAYS, AND OF ARTICLES, SURFACES, STRUCTURES, AND ERECTIONS, SUBJECT TO THE ACTION OF FIRE OR ATMOSPHERIC INFLUENCES.—Dated May 29th, 1861.—T. Hale and A. Wall.

This consists in erecting in the furnace, in contact in or near to the fire, a wall or partition, or a chamber, or two or more chambers, with openings or perforations through or into which the smoke, gases, or vapors arising from the combustion of the fuel, or the air before coming in contact with the fuel, are to pass. The inventors add to clay in the process of manufacture a preparation of powdered asbestos, pumice-stone, or lava, magnesia, and bone ash.

IN THE MANUFACTURE AND ORNAMENTATION OF METALLIC CHIMNEY-PIECES, OR MANTEL-PIECES, AND IN THE ORNAMENTATION OF METALLIC STOVES AND FIRE-PLACES.—Dated May 29, 1861.—H. Crichtley.

The patentee claims making metallic chimney-pieces, and plates or sheets of metal, jointed together by rivetting, screwing, soldering, &c. 2. Ornamenting metallic chimney-pieces, and also stoves and fire-places, by affixing ornamental paper to those parts of the chimney-pieces, &c., which it is wished to ornament.

AN IMPROVED WINDOW SEAT, PART OF THE INVENTION BEING APPLICABLE TO OTHER PURPOSES.—Dated May 30, 1861.—W. B. Roof.

This consists of a seat with sides and a back (or only a back without sides), formed of wood or otherwise, and so constructed that it shall rest on the window-sill and hook on to the inside of the window frame.

COMPOSITION TO BE USED IN SUBSTITUTION FOR BRICK AND STONE, AND AN IMPROVED METHOD OF CONSTRUCTING WALLS AND ROOFS FOR HOUSES, &c.—Dated June 4, 1861.—S. Standfast.

This improved composition is formed by running into blocks the following ingredients:—Burnt clay or loam, iron dust, brick rubbish, gravel, hoop iron, wire, lime, cement, vegetable fibre, animal hair, and sand. The improved method of constructing walls and roofs consists in the employment of hollow frames or moulds formed of wood or metal, between which the above named ingredients are run or placed in a loose state, the material for forming the outer face of the wall or roof being first applied against the inside of the material forming the outside of the frame or mould. The materials form one solid compact and jointless body. After they have become set and solidified the frames or moulds may be removed. The patentee prefers to construct the chimneys and flues required in the building by letting into the composition glazed earthen pipes.

A CONE PREVENTING SMOKE AND EXTINGUISHING FIRES IN CHIMNEYS.—Dated 16th June, 1861.—A. L. C. de Montagu, Paris.

This invention consists in the peculiar construction and application of a chimney cover or pot for preventing, in any weather, chimneys from smoking in the interior, and for facilitating the extinguishing of fires therein. This conical cover may be made of strong sheet iron, baked earth, or other suitable material, and is fitted to the upper opening of the chimney duct. The diameter of the base of the cover is equal to that of the orifice which it covers, and its height about double the diameter of its base; the top of the cover is truncated by a section perpendicular to its axis, and is of a diameter equal to one-fifth of the diameter of the base for fuel, giving off little smoke; the upper half or cone is perforated with holes of a diameter equal to a twentieth of the diameter of the base, with an interval between each of them equal to double their diameter.

IN THE FORM AND CONSTRUCTION OF CHIMNEY TOPS, OR APPARATUS FOR SURMOUNTING CHIMNEYS IN ORDER TO REGULATE THE UP-CURRENTS AND PREVENT THE DOWN-DRAUGHTS.—Dated June 12, 1861.—J. Durrant and N. A. Harris.

This invention consists of a cylinder of metal, preferably zinc or earthenware, or other suitable material; on the top of this the patentees fix, or attach, or form a series of corrugated cells, opening towards the bottom, so as to receive the external air, which passes out of the top into the interior of an open conical cap fixed there. These cells may be either slightly inclined or vertical; the band on which these cells are affixed, as before stated, opens into a conical cap, which is affixed to, and opens into, and encircles the cylinder. Round the outer periphery or surface is another series of conically shaped cells, the bottom of which, being open, receives the outer air, and passes it into the interior of another conical cap placed directly over it and concentric with the cylinder.

1. SMOKE-CONSUMING GRATE.—Dated June 12, 1861.—L. J. J. Petre.

This invention relates to a new arrangement of furnace grate for the consumption of smoke, composed of fire bars, each having two parallel side cheeks or flanges, connected at the upper part at intervals by the pieces cast on the cheeks. The upper surface of the fire bar may be of a round, square, elliptical, triangular, or other form; it is also provided at intervals with elongated holes, arranged in various ways, to allow air introduced at the under part of the grate to pass between the cheeks, and through the tubes in the bars into the centre of the fuel, so as to obtain more perfect combustion.

AN IMPROVED "FLOOR-BOG," OR CRAMP.—Dated June 12, 1861.—G. Cox.

The object of this invention is to obtain sufficient pressure against the edges of floor boards to keep them in position and close together during the operation of nailing to the joists. The inventor proposes using a lever of cast or wrought metal, about the thickness (or rather more) of the floor board; on the under side of this lever are placed two lugs or pegs, rather further apart than the width of the joist, so that when the lever is brought back from the right angle to the joist, the lugs or pegs firmly grip each side of the joist, while a wooden bar, which is jointed to the lever, presses a driver, also of wood, against the edges of the floor board. This driver is to be driven by blows from a hammer or mallet in a parallel line with the floor boards, which tends to bring the driver from the oblique line to the rectangular, thus forcing the floor boards together during the operation of nailing to the joists.

New Iron Bridge over the Mersey.—Messrs. Bellhouse, of Manchester, have recently erected a foot-bridge over the Mersey at Northenden. The bridge spans the river by means of two wrought-iron lattice girders, of ornamental open design, the width of the river being nearly 85 feet. Each girder is 88 feet long, 6 feet deep in the centre, and 2 feet 6 inches deep at the ends; the space between the two girders is 6 feet, which is filled in with cross beams and planks, forming the footway. The bridge is carried upon eight cast-iron piles, four at each end, 8 inches in diameter, driven about 16 feet into the ground. The footpath is continued to the top of the bank on each side of the river by iron beams, plank-ing, and railing. There are two arches of cast-iron, with shields having armorial bearings thereon, connecting the upper parts of the lattice girders; and in one of these there is an iron openwork gate.

* Selected from the *Mechanics' Journal*.

TENDERS.

KENT COUNTY CONSTABULARY STATION.

Alterations and additions to buildings at Wren's-cross, Maidstone, for head-quarter's station. Mr. Bulmer, county surveyor. Quantities furnished by Mr. George Ruck.			
Naylor	£1,627 0	Bates	£1,470 10
Holloway	1,567 0	Wallis	1,465 0
Ayers and Son	1,550 0	Clements	1,465 0
Chambers	1,518 0	Grensted, Bridge, and Son	1,443 0
Cobb	1,476 7	Sutton and Vaughan (accepted)	1,396 0

HOTEL, ALDERSHOT.

For a new hotel in the Bank-street, Aldershot, for Mr. Thomas Taunton. Messrs. Eggar and Stapley, architects, Farnham and Aldershot.
J. Martin, Aldershot. £2,550

CHURCH, LIVERPOOL.

For erecting St. Martin's District Church, Liverpool. Messrs. W. and J. Hay, architects. Quantities taken out by Mr. Sherlock.

	First Plans.	Second Plans.
R. Wells	£3,020	£1,480
J. H. Mullin	3,091	1,476
J. Westmoreland	3,030	1,461
Nicholson and Ayre	3,072	1,381
Hugh Yates	2,960	—
Wm. Tomkinson (accepted)	2,799	1,335
Lapsley and Morloe	—	1,155

COMPETITIONS OPEN.

BRIDGE.

BRISBANE RIVER.—The Municipality of Brisbane are prepared to receive designs and tenders for the construction of a bridge over the Brisbane river, at Brisbane, the capital of Queensland. The author of the best design, at the lowest cost, will receive a reward of £150, or be employed to carry the work out, providing he furnishes sufficient proof of his competency and experience in similar undertakings. A premium of £80 will be awarded to the next best design, and £40 for the next best. The plans, specifications, and estimates of the first and second designs will be retained by the Corporation as their property. The remainder will be returned to the competitors; but the corporation will incur no responsibility as to their safe delivery. Each set of drawings, and the documents accompanying them, are to be distinguished by a motto only, and accompanied by a letter in a sealed envelope, marked with the same motto, and containing the author's name and address, and such testimonials as he may think proper to furnish. Professional judges, being non-competitors, will be appointed by the Corporation to determine the merits of the respective designs. Eligible tenders for the work, accompanying the design, will be entertained. All drawings and tenders to be delivered at Gresham House, on or before the 15th of March next. Copies of the instructions to competitors, and the plan of the city, can be obtained of F. Mangies and Co., the Colonial agents, and agents to the Municipality of Queensland, 86 to 88, Gresham House, Old Broad-street, London, E.C.

THAMES EMBANKMENT.

LONDON.—The Commissioners are open to receive plans for embanking the Surrey side of the river Thames, within the metropolis, which will conduce with the greatest efficiency and economy to the improvement, embellishment, and convenience of that part of the metropolis, will improve the navigation of the river, and will provide a public thoroughfare without stopping such trade as must be carried on upon the bank of the said river. Plans must be sent in on or before Monday, the 13th January.

CONTRACTS OPEN.

GAOL.

MONAGHAN.—For the alterations and additions to Monaghan Gaol. Plans, &c., to the 2nd of February next, at the gaol, and at the office of the architect, Mr. John McCuddy, 34, Westland-row, Dublin. Sealed tenders to be delivered at the gaol, before 3rd of February.

DWELLING-HOUSES.

DUMFRIES (N. B.).—For the mason, joiner, and other works required to erect and complete the following buildings on the Estate of East Tinwald, for M. Carthew Yorston, Esq.:—1. A dwelling-house and steading of offices on the Farm of Fernyleuch. 2. Two cottages on the Farm of Fernyleuch. 3. A dwelling-house and steading of offices on the Farm of Bruntshields. Plans, &c., with James Barbour, architect, Dumfries, to whom tenders on or before January 28th.

CHURCHES.

IRELAND.—For works to be executed at the churches of Inistogue, co. Kilkenny; Donoghmore—Stradbally, Queen's Co.; Kinsale, co. Waterford; and for building the church of Glengariffe, co. Cork. Plans, &c., with the resident ministers of the parishes. Tenders to be directed as follows:—"Proposals for —, the church of —, The Ecclesiastical Commissioners for Ireland, Dublin," before Jan. 16.

RECTORY.

RADNORSHIRE.—For building a rectory-house and offices at Norton, near Presteign, Radnorshire. Plans, &c., with Thomas Nicholson, F.R.S.A., diocesan architect, St. Peter's-square, Hereford. Tenders to be delivered to the architect, on or before the 18th of January.

WAREHOUSE.

LEEDS.—For the erection of a warehouse in Park-place, Leeds. Drawings, &c., with T. Ambler, architect, 10, Park-row, Leeds, from the 13th to the 21st January. Tenders to be sent to Mr. Ambler not later than 12 a.m. on the 23rd January.

WATERWORKS.

GLOUCESTER.—For providing and fixing at the Gloucester waterworks. Contract 1.—Two wrought iron triangular girder foot bridges, 96 and 88 feet span, with iron fencing. Contract 2.—About 800 yards of wrought iron continuous fencing, and other works, at Witcombe, about six miles from Gloucester. Plans, &c., at the office of Mr. W. Mc Landsborough, A. I. C. E., surveyor to the Local Board, Corn Exchange. Tenders to be sent to Mr. K. H. Fryer, clerk to the Local Board, Gloucester, under cover, addressed to the Gloucester Local Board of Health, on or before the 15th inst.

VILLAS.

ESSEX.—For the erection of a pair of Villas, at Witham, Essex. Drawings, &c., with Fred. Chancellor, architect, &c., 25, Old Broad-street, London; and Chelmsford, Essex. Tenders to whom by the 18th January.

COVERED YARDS.

ESSEX.—For the erection of covered yards, at Tillingham Hall, Essex, for the Trustees of Dean Clarke's Charity. Drawings, &c., with Fred. Chancellor, architect, &c., 25, Old Broad-street, London; and Chelmsford, Essex. Tenders to whom by the 18th Jan.

DOCKS.

WORKINGTON.—For the construction of a wet dock for the Right Hon. the Earl of Lonsdale, at Workington, Cumberland. Specifications, &c., at the offices of Messrs. Lumb and Howson, solicitors, Whitehaven; or of Mr. A. M. Rendel, C. E., 8, Great George-street, Westminster. Sealed tenders, endorsed, "Tender for Workington Dock," Messrs. Lumb and Howson, Solicitors, Whitehaven, on or before the 28th January.

FARM BUILDINGS.

DEVON.—For the erection of a new farm house, at Halscombe, near Ide. Plans, &c., at Messrs. Daw and Son's offices, solicitors, Bedford-circus, Exeter, where tenders must be forwarded by the 1st February.

MILITARY WORKS.

CORK.—For works of defence, including bomb-proof barracks, at Camden Fort, Cork Harbor, Time for tenders extended to January 22nd.

FLEETWOOD.—For tenders, in detail, for the erection of a two-gun wooden battery, at Fleetwood. Plans, &c., on application at the Coastguard Watch-house, Fleetwood. Further particulars to be obtained from Commander Chapman, R.N., Morecambe, to whom all correspondence is to be addressed, and with whom tenders are to be lodged by Saturday, January 11th.

PATENT SLIP.

HULL.—For a patent slip, not less in size and capacity than the largest of the existing slips at Kingston-upon-Hull, for the use of vessels frequenting the port, for the directors of the Dock Company. A statement of the conditions may be obtained upon application to the secretary, W. H. Hufham. Accompanying these conditions is a form of tender, upon which only tenders will be received. Tenders must be sent in on or before 12 noon, of the 18th January, addressed to the secretary.

SUPPLY.

KENT.—For the supply to the Trustees of the Wrotham and Maidstone roads, of the following materials in the undermentioned districts:—Surface-picked Flints. 1st District.—From Footscray Bridge to the 15th milestone, 200 yards, 2nd ditto—from the 15th to the 18th ditto, 150 do.; 3rd ditto—from the 18th to the 21st ditto, 200 do.; 4th ditto—from the 21st to the 25th ditto, 200 do.; 5th ditto—from the 25th to the 28th ditto, 200 do.; 6th ditto—from the 28th to the 30th ditto, 200 do.; 7th ditto—from the 30th to the 32nd ditto, 200 do.; 8th ditto—from the 32nd to the 34th ditto, 200 do. The materials to be deposited clean and unbroken on the side of the road at such places and times previous to the first day of November next, and in such quantities in the above districts as the surveyor shall direct, and to be laid in separate heaps containing a yard cube each. The form of tender may be had of the surveyor, Mr. John Collis, of Birling, or no other form of tender will be received. Sealed tenders, addressed to the Trustees, and marked "Tender for Materials," to be delivered at the Swan, in West Malling, on or before the twelve at noon of the 25th inst.

SALES AT GARRAWAY'S AND THE MART.

FREEHOLD.

By Messrs. E. Fox and Bousfield.
ST. GILES'S.—House, with shop, No. 10, High-street, St. Giles's, with cottage in the rear, the whole let on lease at £33 per annum; sold for £540.
House, with shop, No. 11, High-street, let on lease at £34 per annum; sold for £400.
House, with shop, No. 12, High-street, also four cottages in the rear, the whole let on lease at £30 per annum; sold for £700.

By Messrs. Hudson and Son.

WOOLWICH.—Residence, known as "Prospect House," Woolwich-common, let at £50 per annum; sold for £700.

By Mr. Marsh.

CLAPHAM.—Residence, No. 13, Stockwell-place, Clapham-road, let at £40 per annum; sold for £620.
Residence, No. 14, Stockwell-place, let at £45 per annum; sold for £700.

LEASEHOLD.

By Mr. Marsh.

CAMBERWELL.—Dwelling-house and shop and two residences, Nos. 4, 5, and 6, Alhion-place, Camberwell New-road, let at £116 per annum, term 97 years from 1845, ground-rent £13 per annum; sold for £920.
BUCKLERSBURY.—Warehouse and premises, No. 2, Bucklersbury, let at £278 per annum, term 14 years from March, 1860, ground-rent £160 per annum; sold for £150.

By Messrs. E. Fox and Bousfield.

WHITECHAPEL.—Four houses, Nos. 49 to 52, Great Prescott-street, Goodman's-fields, Whitechapel, with stabling and workshops in the rear, let at £120 per annum, term 61 years from Christmas, 1807, ground-rent £28; sold for £290.
HYDE-PARK.—Family residence, No. 7, Connaught-place-west, Hyde-park, held for 21 years from June, 1856, at £145 per annum; sold for £200.

By Messrs. Hudson and Son.

WOOLWICH.—Residence, 1, Nightingale-terrace, Woolwich, value £60 per annum, sold for £175; term unexpired 42 years.
Two residences, 2 and 3, Nightingale-terrace, value £90 per annum, ground-rent £8, term unexpired 44½ years; sold for £240.
Two similar houses, 4 and 5, Nightingale-terrace; sold for £240.
Two similar houses, 6 and 7, Nightingale-terrace; sold for £260.
8, 9, and 10, Nightingale-terrace, value £135 per annum, term unexpired 48 years, ground-rent £14; sold for £140.
Premises, Woolwich-common, let at £75 per annum, term unexpired 16½ years, ground-rent £12; sold for £590.
Stratford-house, Woolwich-common, value £50 per annum, term unexpired 9½ years, ground-rent £5 15s.; sold for £460.
Residence, adjoining above lot, let at £40 per annum; sold for £650.
Four houses, 3, 4, 5, and 6, Clarence-place, Woolwich, value £240 per annum; term unexpired 20 years, ground-rent £20; sold for £780.
Six houses, 1 to 6, Queen's-terrace, Woolwich, let at £400 per annum, term 30 years, ground-rent £27 11s.; sold for £1,170.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favor us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

E. F. L. (Northampton.)—Shall appear; we could reply more satisfactorily if we were to see sketch.

K.—By hot water. There are so many good makers that it would be difficult to name one as the best.

H. B. L. (Tavistock-street.)—We do not know.

S. T. N.—Will probably see a reply in our next.

B.—We cannot refer.

T. D.—We cannot appoint a time, but will take our chance.

C. R.—Complaints often reach us on the subject; write to the secretaries.

L.—We shall be glad to see promised sketches.

B. B. B.—In our next.

MR. GEORGE C.—Report will be given.

F. E. W.—Try again.

S. AND J.—Below our mark.

M. P.—Thanks; shall be made use of.

T. W. T. (Euston-road.)—Received.

C. X.—We cannot comply with such requests.

A.—Particulars have not reached us.

G. M.—Send extract from conditions.

T. R.—Yes.

L. O. L.—Not fairly stated.

INDEX TO VOL. VII.—The Index and Title Page to the past volume will be issued with our next number.

THE CHAMBERS' SUPPLEMENT.—In answer to several correspondents, the remainder of the "Chambers' Supplement" will be printed as soon as the plates can be prepared, and will then be presented to subscribers; thus enabling them, in compliance with a generally-expressed desire, to complete the work at once.

* * * All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old Bow-church-court, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 15 to 21, Old Bow-church-court.

THE YEAR'S PROGRESS.*



THE circumstances connected with the curatorship of the Soane Museum is another instance of the evils resulting from lack of professional organisation. Into the qualifications of the candidates we have no wish to inquire. It is sufficient to note that the gentleman at present holding the office is not an architect, and that his professional achievements do not satisfy the requirements of the Act of Parliament. The result of the imbroglio is the resignation of two of the trustees, and a proposition to apply to the Legislature for fresh powers, which may end in the collection being sent to South Kensington, or made more accessible to the public than it is—a result which, in the interest of artistic study, we should welcome. Again, the cool way in which architects were shelved by the Commissioners of the International Exhibition deciding to “have nothing

to do with them,” may be traceable to the same source. On the merits of the building there is no occasion to speak; they cannot be fairly judged until the structure be complete. But this we may be permitted to say, that had architects been allowed the opportunity, there is no reason to suppose that they would have been unable to supply designs quite as meritorious, from an architectural point of view, as Captain Pownke's, and quite as cheap in construction. If eminent architects led the Commissioners into a dilemma last time, which we deny, they should have been afforded an occasion to repair their error. It would have been gracious to have made this concession. But the cause of the dilemma did not reside with architects; it was with the Commissioners themselves, who did not know their own minds, or, at all events, did not know what was required. From the novelty of the thing their ignorance was quite excusable. Had it been otherwise, and the Commissioners been able to say “we require a temporary structure, covering so much superficial area, and affording so much wall-space, the whole not to exceed a certain amount for cost,” it is ridiculous to insinuate that architects could not have designed a monster greenhouse just as well as Sir Joseph Paxton did. On the present occasion we do not complain of the Commissioners having obtruded an officer of Royal Engineers on the profession. On the contrary we desire access to it to be as free as possible. But we do complain that architects should not have been allowed to compete with this gentleman for designing a national edifice—one which foreigners will not unnaturally regard as the standard of constructional skill and æsthetic capacity possessed by British architects of the present day.

If we turn from the social position of architects to their works the prospect will be infinitely more cheering. A general view must satisfy the least favorably disposed towards the profession that there is a steady and very marked progress in the constructional and artistic character of recent buildings. We do not say all are good, nor do we seek to deny that errors have been perpetrated, often springing from a striving after originality, but we do contend that on every side there is evidence of more thought, of more serious study, and of a greater desire to build honestly than existed formerly, or are to be found among contemporaries abroad. In the provinces, but more particularly in Lancashire and Yorkshire, the revival of study and conscientious construction are quite as remarkable as in the capital. In Manchester, Liverpool, Edinburgh, Glasgow, Dublin, Newcastle, Leeds, Halifax, Hull, and other towns, structures are arising highly creditable to the age, and which, on the Continent, would be regarded as architectural monuments.

Judged by the works they have been commissioned to execute, Gothicists would not appear to have experienced any diminution of public favor; the check they may have suffered with respect to the Foreign Office has been compensated in other ways. We may sympathise with the architect, under his annoyances, and some may even go to the extent of regretting that he should have condescended to design, “for God's sake! something Italian,” but the pressure put upon him proceeded from individual taste, and is liable to be removed at any time—even before the foundations are laid, by the play of political parties. Nor are the Medievalists altogether devoid of hope that the presence of

Mr. Layard in the Ministry may lead to modifications which may end in a return to Mr. Scott's original design, or in the structure being gradually Gothicised, as it is developed. Of late there has been a noticeable tendency to forsake servile copyism of Gothic examples, and, instead, to work in a Gothic spirit, with greater freedom, in view to employ unhesitatingly, and as liberally as may be consistent with artistic propriety, modern appliances to satisfy modern requirements.

The stronghold of Gothicists has been in ecclesiastical edifices, of which the most remarkable are the churches and restorations of Mr. Scott, Mr. Street, and Mr. Butterfield. One of the earliest attempts, if not the first, to introduce the Italian, or polychromatic, element into English Gothic has been nearly completed by the restoration of All Saints', Kensington, which was commenced ten years ago or more. Here the original architect introduced red voussoirs in exterior arches, mosaics in spandrels, and made the columns of Devon and Cornish marble. The pulpit is of Derbyshire alabaster, Cornish marble, and Irish black marble. The seats are open and stained, while color and gilding have been introduced in the reredos. The pavement is composed of colored quarries; and horizontal bands of the same material, black, red, and yellow, are carried round the lower part of the walls up to a height of about 6 feet. Mr. Street's church in Westminster is an admirable example of the architect's taste and skill, and is remarkable for what many will regard as his happy innovations. The material of the walls both external and internal is common red brick. The architect has relied more than usual on polychromy for effect, and on the aid of sculpture and painting. What is certainly a novelty, and must create doubts of the architect's orthodoxy in the minds of advocates of parochial whitewash, is Mr. Watt's truly noble fresco which decorates the east wall of the nave, and is a greater work of art than his fresco in Lincoln's-inn. Sculptured medallions are introduced in appropriate positions. The columns dividing the nave from the aisles are of polished red granite with carved capitals, illustrating the miracles and parables. The roof is boarded between the arched ribs are elaborately decorated with designs in color. Another novelty is the decoration of the apse with figures incised in stone, filled in with black cement, while the pulpit, if taken by itself, would be considered as a highly creditable piece of sculpture, carefully designed, and wrought ironwork is employed as screens. Mr. Butterfield's church in Baldwin's-gardens is scarcely sufficiently advanced for us to speak of it in detail. Superior to Margaret-street church in general design, perhaps, it will not be inferior in the richness and elaborate decoration of the interior. The materials of the walls are the common yellow bricks, but for the decoration of the interior alabaster and colored marbles are to be employed, as well as a series of frescoes. These are the two chief features of progress in ecclesiastical architecture during the year (besides Mr. Scott's cathedral restorations), which indicate a stride forward in a direction the people of England have not hitherto witnessed. Elsewhere in the metropolis and the provinces churches and chapels have been erected, which we regret our want of space precludes us from noticing. They will be found set forth in the volume just ended.

The new room to the National Gallery is an improvement, but can be regarded in no other light than as a costly makeshift. A Turner gallery has to be built, which Mr. Pennemorne proposes to do, and at the same time to supply additional accommodation to the National Gallery by building a suite of rooms at the back, over part of the workhouse site and the barrack-yard, at a cost of £100,000. The structure is to be devoid of architectural character and ornament, and will supply an area of 30,000 square feet. But seeing the rate of increase of the national collection of pictures, it will not be many years before the new excrecent edifice will be filled to repletion, and a fresh offshoot, equally devoid of architectural character rendered necessary. What is to be done with the British Museum?—is a question that has been repeatedly asked, without eliciting a reply. It is rumoured that the separation of the natural history collections from the rest is to be effected; but where they are to go yet remains a question.

The buildings of the Horticultural Society exhibit in a fresh and agreeable manner the resources of Italian architecture; and in the monster hotels that are springing up in connexion with railway termini architects have found admirable opportunities for displaying their skill in dealing with large street façades. The task is not easy to execute; and with the exception of the Grosvenor Hotel, there is not one which an architectural critic would be inclined to regard as possessed of high artistic merits. They may be honestly built, and well planned, but they are not in all respects satisfactory works of art.

Having so recently described at length the metropolitan improvements designed or in the course of being carried out, the arterial drainage works, new thoroughfares, markets, bridges, and railways, we may be permitted to omit further notice of them here. But we cannot refrain from congratulating all parties concerned in building operations on the apparent termination of those unhappy strikes, which have done

* Continued from page 29.

nothing but mischief, and would lead to the belief of unconquerable ill-feeling existing between masters and men. It is, however, some consolation to learn that during the last decade the census reveals the fact, if it were not known from other quarters, that the building trades have had their fair share of prosperity. In England we have built, or are building, 523,835 new houses, which is doubly satisfactory, as affording proofs of the activity of the building trades, and of the increasing well-being of the community at large.

CHURCH RESTORATION.

IT is not often the case that those who are habitually engaged on practical works, and can carry them out in the best way, can equally well write about them or describe them. To take only a single instance, George Stephenson, the father of our railway system, though one of the most inventive and skilful engineers the world has ever seen since mechanics first became a science, was one of the worst possible witnesses, and his friends never offered his evidence without reluctance. It is, therefore, of peculiar value to obtain the opinions on a practical subject of a practical man, who unites to technical skill the ability to write and speak well.

On this ground, the paper of Mr. Scott, "On the Conservation of Ancient Buildings," published in our columns, possesses a value of no ordinary kind. Few men, if any, have been so extensively employed in the work of protecting and preserving ancient buildings, and few architects could be found so capable of conveying to others the impressions made on their own minds by their experience of that or any other professional engagement.

We are, therefore, justified in supposing that Mr. Scott's paper will be almost universally read, and read with great attention, and that consequently the subject of it will be likely to be just now very extensively under the notice of our readers. This being so, now is the proper time for any observations of our own, on the whole question or on any portions of it.

Church restoration is by no means the same thing as the conservation of ancient buildings; but it is a part, and a very important part, of that comprehensive subject; and more commonly brought under notice than any other sort of preservative or restorative work. We propose, therefore, to limit what we have to say in this article to works done upon that one class of ancient buildings which includes ancient churches and chapels, without noticing either cathedrals on the one hand, or domestic, antiquarian, or monumental objects of architecture on the other.

The word restoration is an unfortunate one. "I could almost wish," says Mr. Scott, "the word *restoration* expunged from our architectural vocabulary, and that we could be content with the more commonplace term *reparation*." This is most true. It is too often the case that those engaged in directing the works on an old church, conceive it to be their duty to bring it back if they can to the condition in which they consider it was left when first built,—or what is worse to bring it to a condition such as it might have occupied at some time or other, had certain ideas which they suppose to have been among the intentions of the first architect been carried out.

Many other examples of extravagant interpretation of the word "restoration," might be adduced. In putting our own interpretation on the word, we will take it in a very conventional sense. We will for the present quite ignore any more distinct signification of the word than that which every builder, and almost every architect, attributes to it, that is, the works which it has become at the present day customary to undertake, in order to remedy the long neglect and misuse to which most ancient churches have been subject—and often also in order to enlarge or improve them, to meet such modern requirements as want of space, want of warmth, want of comfort, and the like.

Such works are going on now, on all hands, for a vast amount of zeal and liberality has wakened up to a sense of the disgrace which attaches to those who live themselves in splendid dwellings, and allow the house of God to fall into ruin. Few architects are without some work of this nature, and many have had numbers of such "restorations" within a very few years entrusted to them, and it is therefore of the highest importance that as these works badly directed will be peculiarly injurious, they should be carried on in a right spirit.

As a work of art, and, at the same time, a work of local history, an ancient church has a value second to no other work either of art or skill which this country contains, and they who have the care of it have the responsibility of being public guardians of most valuable property. Destroy its antiquity, and its greatest value is lost; replace it with a copy, and you perform an act as directly of public robbery as if you were to cut to pieces the pictures of the National Gallery, and leave copies in their place on the walls. Carelessly or thoughtlessly replace broken fragments, or supply missing links, and you perhaps procure for your own careless work the reputation of being ancient, and thus damage the reputation of others, unknown now by name, it is true, but not on that account unworthy of renown, whose art was older and nobler than yours; or else you bring really ancient work into doubt, or even into disrepute, through your association of your own with it.

There can be no doubt that very extensive works are necessary to churches, and always have been; but it is quite certain that such works as were undertaken down to the sixteenth century have seldom left much to regret, while those done after that day have produced the evil result we have above referred to, or in some other way have been equally re-

grettable. Why is this? What did the fathers do in their works of addition or reparation, or rebuilding, which we, their children, have failed in many cases to do in our turn?

What they did was simply this, they built always in a style suitable to Ecclesiastical buildings, but always also in a style of their own, and these we believe to be the true principles upon which all additional works to be done to churches should be executed.

The men of the seventeenth and eighteenth centuries acted upon one only of these principles—they always worked in their own style, and we ought so far to thank them for it. It is true that most of their work was entirely unsuitable to the character of the buildings, eminently inappropriate to churches, and as such we remove it, and regret that in many cases it has permanently disfigured the church. But in no instance will even an ordinary observer mistake an addition of the last century for an original portion of the fabric; and, this being so, we suspect that a right-minded man will, in nine cases out of ten, be more grateful to the men of that century, clumsy and barbarous as some of their church alterations were, than to us. We have in countless instances replaced really fine old fragments by work which, though it may perhaps claim to be in some small degree more appropriate, has no distinctive character of its own; work which, inferior in value to the original, both as being a copy, and also usually as being an inaccurate copy, is yet sufficiently close an imitation of it to occasion difficulty to those who desire to refer to the really genuine work in the church.

What we desire here, then, to urge is, not a mere repetition of what Mr. Scott has so well and so clearly urged, as to the necessity of intelligence and care in copying mouldings, and in supplying lacunæ in tracery, of abstinence from attempts to restore carving, and of an almost superstitious anxiety to preserve genuine portions of antiquity; we are content to leave that as he put it. But restoration works, as we have defined their meaning, do ordinarily imply the re-introduction of some features, as, for example, new seating or other furniture, sometimes renewed portions of the existing fabric, and very often fresh features; and we do urge that, as far as possible, these shall be so done as to show at once, and to all time, that they are unquestionably nineteenth-century work and none other.

This, a few years ago, would not have been even so practicable as it is now; and, at the present moment, is not so practicable as it will be some few years hence. But we maintain that it is right in principle, and not only so, but that it has now become to a very great extent practicable in execution.

It is not necessary to repeat here what has been said so often in this Journal, as to the reality of an existing style of architecture. Take the most recent works of our best men, and we find in them a strongly marked amount of coincidence and similarity sufficient to denote them as all belonging to one school, and yet a variety enough to mark them clearly as the works of original artists. At the same time they are such works as, in their general characteristics, stand quite apart from all previous time, and as will be at once referred by the antiquaries of future ages to this particular period of architectural history. Here, then, we have contemporary architectural character, and it is this character that we desire to see impressed on all our addition to, or alterations in, existing buildings.

It will always be easy, and always desirable to preserve general congruity or balance of general features, harmony and outline, and so forth, just as the later Gothic builders did in their additions to original edifices; but it will not be on that account necessary to make believe that the new tower or the fresh porch, or the additional aisle we add was done at the same time as the rest of the building. Such a make-believe is not satisfactory, where it is transparent and consequently easily detected; it is unfair and deceptive where it is carried to such an extent as really to mislead.

Notwithstanding this, it does not necessarily hold good that every fragment replaced, shall be replaced by something essentially different. Where there exists an amount of decay such as renders necessary the renewal of a portion or portions of old work, it may be right if practicable to replace it with a close copy; but we are persuaded, that where a close copy is not practicable, no copy ought to be attempted. The most respectful course no doubt is to leave the stone unwrought, replacing carving by blocks left uncut, and mouldings by stones prepared for moulding only; but where this may not be, and copying is not of the simplest sort, let good and confessedly modern work be introduced, the best but the least ostentatious possible.

The subject is a seductive one; we cannot, however, now pursue it further than to remark that the architect of a church restoration should make it a labor of love. Over and above the ordinary care, for which he is paid, he should devote to each work of this sort care and pains purely for the sake of art; and should think himself well repaid for even a considerable sacrifice of time and trouble, if he do but succeed in preserving one or two genuine ancient features from loss, mutilation, or disguise, and in limiting the amount of new work introduced to the most modest quantity possible.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A SPECIAL General meeting of members only, was held on Monday evening, to receive a report from the Council, on Professional Practice and charges. As it was requested that the discussion should be considered to be of a purely private and confidential nature, we abstain from any notice of a very important meeting. But we may say that the Council deserve the thanks of the entire profession for the production of the report laid before the members.

The meeting was adjourned for the further consideration of the subject.

THE UTILISATION OF LONDON SEWAGE.

INTIMATELY connected with the health and welfare of the inhabitants of large towns is the disposal of sewage, and no false delicacy should be allowed to prevent its study as a question of the highest sanitary and economical importance. The action to which food is subjected, after it has been eaten, has been truthfully compared to that of a furnace. It is consumed in the stomachs of animals, and the refuse disjected is, therefore, the ashes of food. But these ashes are different from those produced by coal or wood fires, inasmuch as they contain the essences of fertility—that is to say, the means for reproduction of fuel for the stomach. We may return cinders and wood ashes to the soil—not that we deny their manurial value—but they will not reappear in the shape of coal or trees; whereas the ashes of food, restored to the soil, are taken up by grasses, vegetables, and cereals, to be transmuted by the recuperative processes of nature into food again, so that nothing is lost. The growth of crops, their consumption, and the return of their ashes to the soil which has been sown or planted afresh, are a regular cycle of processes, no one of which can be omitted without stopping the others. If food be cropped off the land and its ashes not returned in the shape of manures, the soil is exhausted and rendered incapable of again producing food. In England we are placed in an abnormal and costly condition by the erroneous manner in which the sewage of centres of population has been disposed of—or, to be more exact, we should say wasted. Of the enormous quantities of food grown and imported here an infinitesimal quantity finds its way back to the soil. It is stored in cesspools until it loses its most fertilising property, nitrogen, which is evolved in the shape of ammoniacal and other gases, and discharged into the atmosphere, to breed disease, or it is discharged into our streams and rivers, to poison the water we drink. To remedy this wilful waste we are compelled to import guano, bones, coprolites, and other manures, at a cost of several millions annually, while we are obliged to pay a further penalty in the shape of sewer rates for unproductive sewerage works.

What is the money value of this annual waste? Liebig says the price of nitrogen alone produced by every 100,000 persons is £12,000 a year, and would suffice to manure 50,000 acres of wheat land with the accompanying phosphates, alkaline and neutral salts, and organic matter. Mr. Edwin Chadwick asserts the yearly value of disjecta is £1 17s. per head. According to Professor Johnson the annual value of fluid disjecta for every 100,000 of population is £223,000; while Mr. Lawes estimates at 6s. a year the actual value of the chemical constituents of the dry substance of disjecta per head, leaving the more valuable fluids out of the question. For the sake of round numbers, we will take the population of the three Kingdoms at 29,000,000, though it is more, and will soon be 30,000,000 with the rapid decline of emigration consequent on the civil war across the Atlantic. Then, according to Liebig, the annual value of nitrogen alone, produced by the entire population, will be £3,480,000, and would suffice to manure fourteen millions and a half of acres of wheat land. Mr. Chadwick's estimate, based on practical observations in Belgium, shows the yearly worth of the total disjecta to be £53,450,000. Professor Johnson makes the value of the fluid disjecta £4,670,000, and Mr. Lawes gives the worth of the chemical constituents of the dry substance at £8,700,000. Taking the highest estimate, it will be seen that we annually waste a sum nearly equal to the total amount of revenue raised by taxation, while, according to the lowest estimate, the waste equals the amount produced by the income tax. To put the question in another form, if Mr. Gladstone were invested with the monopoly of disposing of our refuse, its present market value would enable him, if he utilised the fluids, to abolish customs' excise and all other taxes, with the exception of four or five millions; and, if he limited himself to the constituents of the dry substance, he might in his next financial statement announce the abolition of the income and property tax.

Although the Chinese manage to return nearly the whole of the ashes of their food to the soil, it may be argued that we should experience too great a difficulty to collect the disjecta of small centres of population. Admitting the validity of the objection, we reply that, according to the last census, there are 36 towns, with their respective populations above 50,000, whose aggregate populations are 7,395,601. The objection cannot, therefore, apply to them. And the highest estimate would make the annual value, in round numbers, of their disjecta £16,500,000, and the lowest estimate would fix it at £2,218,680.

In the case of the metropolis, where the whole will be shortly collected, Professor Johnson's figures show the annual value of the disjecta is £6,250,000, and Mr. Lawes's, that it is £841,210. To this again must be added the value of the manurial substances carried down by rainfall into the sewer. The droppings from cattle, and pulverised granite from the pavements are of considerable value. Professor Way stated in his report that,—"So far as London is concerned, and considering only the composition of the liquid which reaches the sewers in the time of rain from the streets, it seems pretty certain that it would be as valuable in a manuring point of view, as the ordinary contents of sewers."

It should be remembered that the figures and estimates quoted are the results of investigations of the subject by the most eminent chemists and agriculturists of the day, and are not put forward by speculators or the concoctors of joint stock companies. They are the calm, well digested, and carefully matured conclusions of science. Indeed, there has never been a question as to the value of the constituents of sewage. Their quantity and character can be accurately estimated, and as they are similar to the constituents of manures which are sold daily, their market value is easily determinable. The only question, and which is the cause of the discrepancies in the figures quoted, is as to the extent to which the manurial

constituents can be recovered. If the whole of the sewage is applied to the irrigation of soil, then the highest estimates will represent the minimum economy, but, if only the chemical constituents of dry substances are applied as manure, then the lower estimate will represent the amount of annual saving. Consequently, when the arterial drainage of London is completed, it will collect and discharge manure of the value of six millions and a quarter every year; and the question now raised is whether these millions shall be discharged into the Thames to waste, or rather to be brought back by the flow tide to breed a pestilence in the midst of us, or whether it shall be discharged on to the soil to increase its fertility.

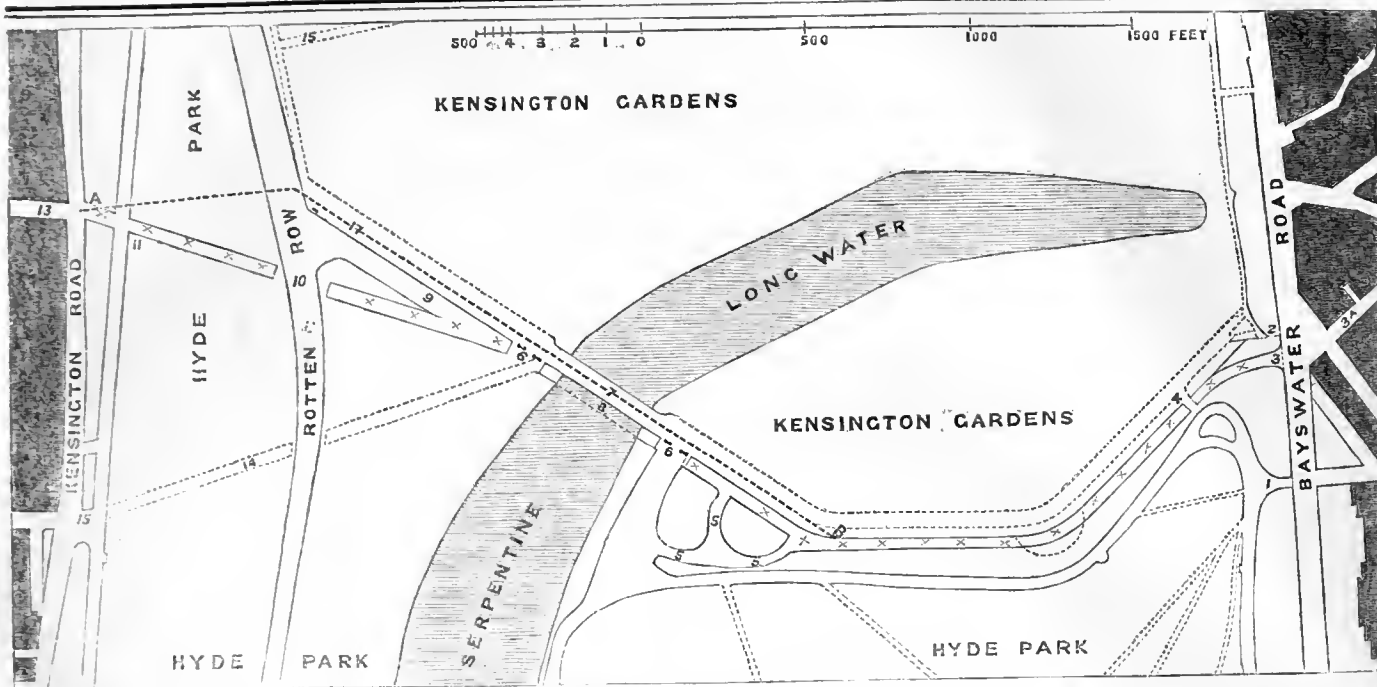
A proposition has been submitted to the Metropolitan Board of Works for applying the entire dry weather sewage of the northern area of the metropolis to the fertilisation of lands to be reclaimed on the Essex coast. For this purpose an area of 20,000 acres on the Foulness Sands and Dengie Flats is proposed to be enclosed from the sea. A brick culvert 10 feet in diameter is to be constructed from the main intercepting sewers at Abbey Mills pumping station to the river Crouch, a distance of 37 miles. From this point two open branch sewers, seven and eight miles in length respectively, are to be built to convey the sewage on to the reclaimed lands. In the line of the brick culvert—at about the ninth mile from Abbey Mill—are to be a lift of 30 feet, and a pumping-engine of 1,200 horse power. Arrangements are to be made for distributing portions of the sewage to farms along the line of the culvert at such distances from the centres of population as to create no nuisance to them. The surface soil of the areas to be reclaimed and irrigated with sewage, consists chiefly of an admixture of sea sands and fluvial silts. It is not deemed necessary to provide subsoil drainage, but merely to place a catch drain inside the line of embankment to retain the surplus water from sewage after irrigation, for discharge into the sea through ordinary sluice valves. The estimated cost of the works is £2,000,000. The advantages of the scheme, besides the great and cardinal one of utilising sewage, are saving the expense of deodorisation which the Board would have to incur in hot weather, and diverting sewage from the Thames, so as to prevent all chance of its being brought back by the flow into the centre of the metropolis. What would be the cost of deodorisation we have no data for estimating, but that it would be considerable and a permanent heavy charge upon ratepayers we may be certain. Equally sure may we be that, if the sewage is discharged into the Thames at Sea-reach, it will, in the course of time, be carried back above bridge by the tides, to form mud-banks, and perpetuate the nuisance we shall have spent millions on arterial drainage to get rid of. The proof that such will be the case will be found in the fact that the salt constituents of the sea are carried up so far as to furnish traces of brackishness at Battersea. The evidence of Mr. Goldsworthy Gurney, in his report on the state of the Thames, supplies additional proof that such would be the case in consequence of the superior power of the upcast over the down. He cited the example of sea sand carried fourteen miles up the Cornish tidal river, Camel, against the freshest. Lastly, it is something to add 20,000 acres of food-producing soil to the area of England. As to the practical and engineering merits of the scheme, we have the authoritative conclusions of Mr. Bazalgette that—

The tract selected appears to be well adapted to the reception of the sewage, and is, indeed, the only one yet suggested to the Board, where, from its position, extent, and nature of its soil, there would be a reasonable prospect of its receiving advantageously so large and constant a discharge of sewage, without creating a nuisance to the surrounding district. That the works have been carefully considered and well designed, and the estimate is fair and sufficient, and that the proposition is the only one the promoters of which have, by depositing plans, placed themselves in a position to carry out during the coming session of Parliament, and so far as its engineering character and details are concerned, it is thoroughly practical, and deserves the favorable consideration of the Board.

Let us now glance at the advantages which would result to the ratepayers from the adoption of the scheme. The Board of Works are to grant to the promoters an absolute and exclusive property in the Northern sewage for fifty years, in return for which they are to share equally with the promoters the net profits after 10 per cent. has been paid upon the capital, and in the profits from the sale of reclaimed lands, after deducting the dividend and cost of the works. The Board are further to be empowered to purchase the works at the expiration of the lease, on giving seven years' notice, at a fair valuation, and to appoint two Directors to the Board of the promoters' Company. What pecuniary gain would accrue to the ratepayers there may be some difficulty in accurately determining; but, from experience elsewhere, we can make a tolerably fair guess. To pay 10 per cent. dividend on capital would require £200,000. The poorest portion of Craigentinny farm, irrigated with Edinburgh sewage, gives an average yearly rental of £18 an acre. Accepting this as data—and that the rental would be much higher, will be evident when it is remembered that the prices for agricultural produce rule much higher in the London than in the Edinburgh markets—the reclaimed estate on the Essex coast would yield a rental of £360,000. If we deduct the dividend there will remain £160,000 for working expenses and for division between the Board of Works and the promoters. The working expenses are not stated, but we shall probably not be very wide of the mark in estimating at £50,000 the Board's share of the profits if the above provisions be realised. Do the ratepayers deem it worth while to run a chance of earning this amount without incurring any pecuniary risk or liability whatsoever; for that is the real question at issue?

The sum which the Board of Works "stand to win" would enable them to reduce the rates they levy by nearly one-half. Is this of no importance to the heavily-burdened ratepayers of the metropolis?

When the motion to accept the proposal of the promoters was brought before the Board by gentlemen from whom it was our misfortune to differ on previous occasions, and on this very subject, it was postponed for a month by a division of 17 to 13 on the most futile pretexts. One was to



PLAN OF SUGGESTED LINE OF ROAD ACROSS HYDE PARK.

References to Plan:—

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| <p>1. Victoria-gate.
2. Buck-hill-gate, with entrance as at present.
3A. Westbourne-street.
3. Entrance to Proposed New Road from the Bayswater-road, and opposite to Westbourne-street.
4. New entrance to Kensington-gardens, over proposed new roadway, avoiding thereby the necessity of crossing it on the same level. Between the points 3 and 4 there is an existing difference of 13 feet in the actual levels.
5,5,5. Suggested development of Park carriage communication with the Kensington side of the Serpentine.
6,6. Tunnels on either side of bridge, so as not to interfere with the present entrances to the Gardens.
7. Bridge across the Serpentine, the proposed roadway to be carried underneath it and through piers of arches; the surface of road being 4 feet below level of water.</p> | <p>8. Site for a temporary bridge of boats during the Exhibition period, as there would not be time to finish openings through the bridge.
9. Development of communication between Rotten-row, with the Kensington-road, and which the passage of the proposed new road offers.
10. Tunnel under Rotten-row.
11. Development of Park carriage communication with those existing on the Bayswater side of the Serpentine.</p> | <p>13. Exhibition-road.
14. Line from bridge suggested before the Exhibition-road was formed.
15. Prince's-gate.
16. Broadwalk through the centre of Kensington-gardens.
17. Platform for band.
N.B.—The dotted line from A to B suggests by a subway an additional means of more removing the road from public view. This suggestion would, however, lead to greater expenditure.</p> |
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SUGGESTED LINE OF ROAD ACROSS HYDE-PARK.

Seeing that credit is being given to others for the suggestion, Mr. Harry R. Newton claims to be the original proposer of an open sunk road, following the line of division between Hyde-park and Kensington-gardens, and forming a channel of communication between Bayswater and the surrounding neighbourhood, and Kensington. The drawings (from which the plan given above has been reduced) were, it appears, prepared in the early part of 1856, and on several occasions since that time the author has urged the desirability of arrangements being entered into between the Government and the parishes for its formation.

The following among suggestions relating to the proposed road, which is to be sunk below the general level of the park and gardens, will explain the author's intentions.

A. That as it is important to have a road at once, on account of the International Exhibition, that it would temporarily relieve the financial difficulty to the parishes, Exhibition authorities and others, if the road were opened at first only for day traffic, the parishes, &c., being enabled to open it for night traffic, as soon as the means could be found for railing the road off and providing the lighting it with gas.

B. That for the present urgency, a bridge of boats across the Serpentine, on a level with the intended road, offers a momentary alternative and admits of delay for considering maturely the difficulty of passing the Serpentine.

C. That as the public traffic along the intended road would not be "heavy traffic," it ought to be considered as much for a development to the Park as a public road, so as to render carriage communication between existing park roads on the two sides of Serpentine complete in their circuit.

D. That the foregoing would induce economy of expenditure at the junction of the intended road with the Kensington-road, as at any future and probably remote time, and when the public traffic had increased, the road proposed could then as easily as now, be separated from the Park altogether at that point.

E. That the intended road offers an opportunity for developing the communication between Rotten-row and the Kensington-road, greatly to the convenience of the equestrians, and for considering, as the park and gardens at the junction of the bridge are so crowded, at various and uncertain times, by pedestrians of all ages, whether the route for equestrians now across the bridge, might be diverted into the intended new roadway.

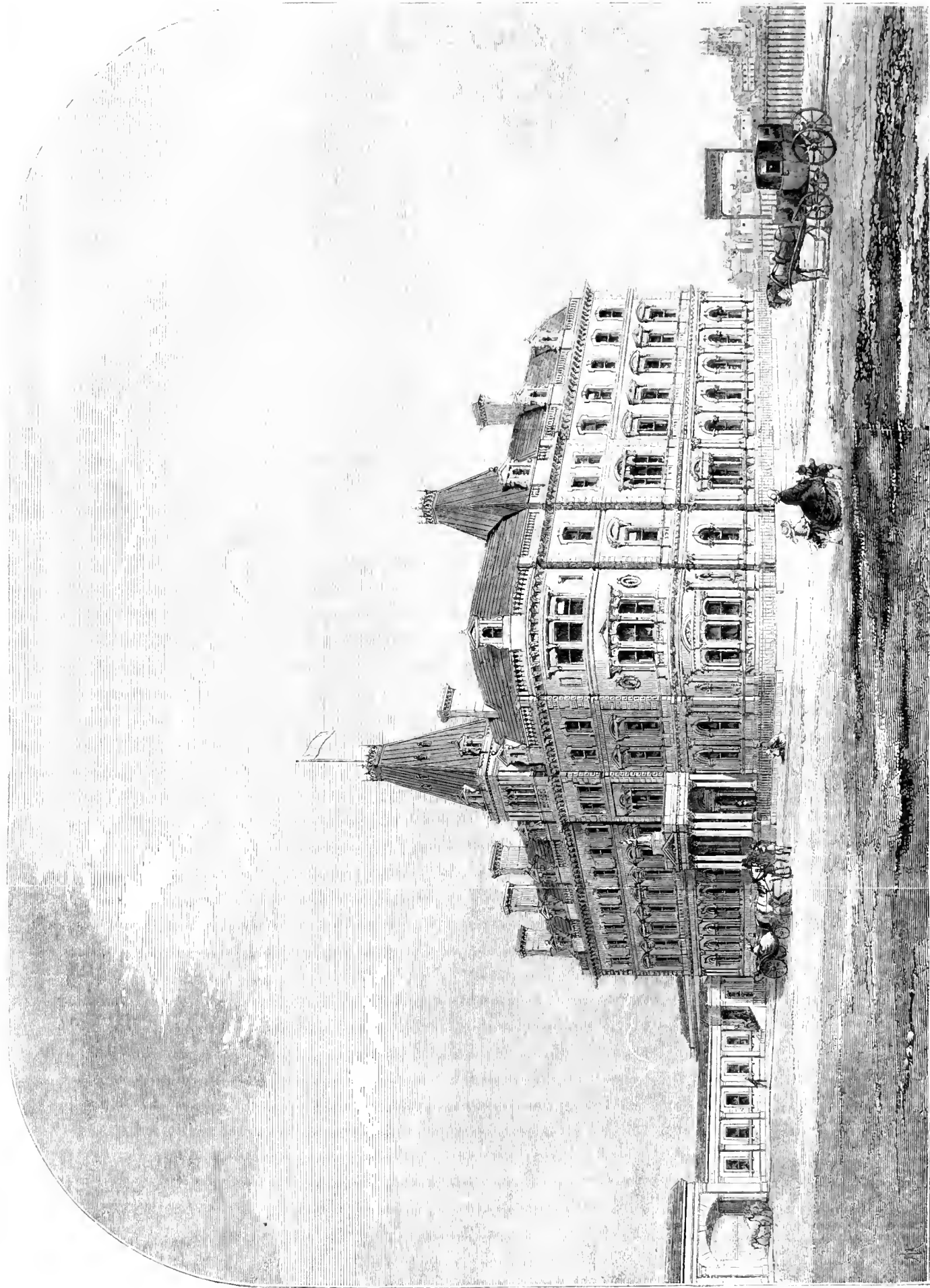
G. That the carrying the road through the piers of the bridge is believed to be the cheapest mode of passing the Serpentine, for preserving the circulation of the water, and for the concealment of the road from the general view, so as not to interfere with the appearance through the arches, obtaining this by keeping the surface of the roadway some 4 feet below the water level, but as even this would form a considerable item of expense, that it might be a question to consider, whether with but little addition to a sum so required, a fund would not exist sufficient to enable the bridge to be widened, carrying the public road through the piers of new part, thus obtaining increased communication on two levels, the lower one for the public traffic, and the upper one for the park. If,

FIRST CITY OF LONDON ENGINEER CORPS.

ENCOURAGED apparently by the remark of Sir J. Fox Burgoyne that "no body of volunteers can be more likely to turn to useful account in case of being brought into the field against an enemy than one organised as Engineers," the promoters of the City of London Engineers are forming a corps to supplement the regular forces of war, and effect the destruction or formation of railways, bridges, roads, and works of defence. The corps is to be composed of architects, civil and mechanical engineers, builders, artisans, and other scientific persons, and we believe there are many in London of these professions and trades who will join such a corps, if only on account of a course of instruction in military engineering, which will be immediately entered upon by the commanding officer Lieut.-Col. H. G. Man.

It is noticed as being remarkable that the City of London which has contributed so largely to the volunteer forces should, until recently, have been deficient as regards volunteer engineers, while other large towns have such corps.

We understand that her Majesty has been pleased to accept the services of the 1st City of London Engineers. Facilities are offered for the accession of artizan members. The head-quarters of the corps are at Church-court-chambers, Old Jewry.



THE QUEEN RAILWAY HOTEL, CHESTER.—MR. T. M. PENSON, ARCHITECT.

therefore, this were thought a park development, perhaps the Government might consider it was justified in providing the means, not for the lower roadway but for widening the bridge.

H. If this public route is at all considered objectionable, on account of noise, dust, &c., at certainly the most pleasant part of the park and gardens, another route is indicated for carrying a subway from A to B on plan, under the broad walk on either side of the bridge and through the piers of the bridge, but though all possible inconvenience would thereby be removed, the adoption of this suggestion would be attended with increased expenditure.

ON THE CONSERVATION OF ANCIENT ARCHITECTURAL MONUMENTS AND REMAINS.*

AND what is the state of the restored church? The external stonework is in good repair, but the antiquity of its details is dubious. The windows are of nice chronological accordance, but they fail to tell the church's history. The internal stonework has thrown off its coating of whitewash, but it has been re-worked, and all the toolmarks of the old masons scraped off by the unplying drag, or chipped away and replaced by modern toolings; the plastering is done to perfection, but it projects in strange unnatural notchings round the stone dressings, and has replaced what was a storehouse of the relics of decorative painting; the roofs are of sound oak, or display all the smartness of stain and varnish, but the old timber-work we valued is gone, and what now appears is not even like it; the floor is, perhaps, of the uniform neatness of a Staffordshire farmer's kitchen, or, it may be, displays all the glories of encaustic tile; but the memorials of the dead have perished, and the works of Mr. Minton (to which they have fallen victims) have scornfully ousted those of his teachers, while the local patterns of old times have given way to those which one now finds stereotyped from end of the country to the other. The windows are nicely glazed with cathedral glass, and some of them with stained glass of reasonable merit, but the one has thrust out the fragments of ancient glass-painting, while the other has scorned all endeavor to follow out and take example from their designs. The bells have been capitally recast by Mears and Warner, and their tones are, no doubt, musical; but if you go up to look at them, you find the ancient fretted border replaced by some vulgar headings, and the pious and beautifully lettered legend by the names of the founders and the churchwardens in lettering which would do honor to a haberdasher's shop.

This is a fair statement of an average church restoration; but there are many worse, as well as many better cases. The great majority, I grieve to say, are very far worse. We find in some of them reckless and often ignorant and senseless destruction of old work, united with an intense want of feeling in all that is done anew; so that the church has become equally sickening from what it has lost and what it has gained.

In others, again, we find an *utter blank* of interest—a church reduced to a state of unredeemed lukewarmness. I have recently been especially struck, in making a little tour, with the prevalence of this last-named type among restored churches: a nauseating blank,—neither anything interesting left, nor anything good introduced; and yet I was self-condemned at considering that the process, viewed as a whole, was much the same as that we are all in the habit of applying in our restorations, the chief difference lying in the degree of conservative feeling and of artistic skill with which it is applied. My great perplexity is to decide whether our entire system should be reconsidered and altered, or whether the whole question is one of details and of individual cases, each to be decided on its own merits.

Now let us consider for a moment what *should* be the bean-ideal of a restored church.

First, of all, we should have all its structural dilapidations so far repaired as to secure it against actual danger, and to insure its stability.

The external stonework would be so far repaired as is necessary to bring out the architectural forms where seriously decayed and mutilated, and to render the structure of the walls sound and durable. This would be done, not on a *wholesale* principle such as could be described in a specification, but in a *tentative and gradual* manner: first, replacing the stones which are *entirely* decayed, and rather *feeling one's way*, and *trying how little will do*, than going on any bold system. Every new stone will thus be a perfect transcript of that which it replaces, and this will, so far as possible, extend to its dimensions and the mode of workmanship, for there is a character even in the proportions of ashlar stones,—still more in the mode of working them. Where a part is wholly or in any great degree wanting, it is questionable whether it would be supplied beyond the extent of existing evidence; when later features have been interpolated, it is yet more questionable whether they would be removed. Such questions must depend upon circumstances, such as the merits of the original and of the interpolation, and upon the question whether the latter is in a state to demand thorough reparation, and whether the original features preponderate and give their character to the building. Such questions, too, would have been entered upon with a strong leaning against alteration; and this would show itself clearly in the result.

The interior would, it is true, be divested of its whitewash; but where this would not come off by fair means it will be more or less left on, for a little discoloration of the stone is of infinitely less moment than the obliteration of the ancient tooling, so that in cleaning it *no hard tool must ever be brought to bear upon its surface*. Where the stonework had been colored or decorated in distemper, the traces of this would be preserved with a loving care, no matter how indistinct or fragmentary they may be.

The plastering may to some extent be renewed; but wherever the old coloring could be preserved portions of the plastering would be left, and the new would be, like the old, *thin*, and not projecting beyond the stone dressings. The roofs, if ancient, will have been studiously repaired, so as to preserve every fragment which can be made to do its duty, even though the roofs may not be of the original date or pitch.

The floor, though levelled and made free from damp, will retain all its monumental slabs in their true places, and the remainder will be made in a great degree subordinate to them, and of the material which, so far as can be ascertained, was before used, whether stone or tile. If old encaustic tiles remain, they will receive all due honor and protection, and new ones will be founded on their patterns.

The seating will probably be the carrying out of such parts of the old seating as may have remained, all old screens, &c., &c., being carefully preserved, and that in their own proper places. Where ancient features, as niches, &c., have been ruthlessly destroyed, they will have been carefully traced out, and either exposed to view and left to speak for themselves, or, if sufficient traces are left and fragments found (which is often the case) to warrant it, they will have been studiously and with religious accuracy restored to their original forms, no old part being disturbed, and every old fragment worked in.

The fragments of old stained glass would retain each its own place, and if new glass be introduced where such remains exist, it will be made to carry out the design which they suggest. In a word, the old church will, by a *studious and tentative* process, have been brought into a seemly state without any startling up of old weather-beaten surfaces, and without any loss of ancient or traditional character; while in such fittings or necessary features as there was no ancient guide for, it will be felt that the restorer united the ability to carry out the spirit of the old work with a desire to limit himself to the smallest possible sphere in the exercise of it.

This seems the true ideal; but, as I have before said, it is by no means easy, and often impossible, to realise it. The extent and intensity of the decay of the materials, the shattered condition of the walls, the extent of barbarous mutilations, and the necessity for enlargement or other practical alterations to meet present wants, all militate more or less against it; yet the ideal suggests the *spirit* in which the work ought to be undertaken, even when it can only be partially attained; and I fear that it is not by any means the spirit with which such works really are undertaken. On the contrary, it seems as if many promoters of restoration, and those they employ, laid themselves out to destroy interesting features, even when a general restoration is not carried out. I passed the other day through a village (Edinbridge, in Kent) where a few years before I had sketched a window of great peculiarity, such as I had only seen one other instance of; it was one whose tracery was arranged especially to give scope to a crucifixion in the stained glass. I went to look at it again, when, to my dismay, I found that it had been singled out from among all the windows in the church for destruction, and a window of the vulgarist form substituted? Again, in a church near Reading there were many beautiful remains of painted glass, of the beginning of the fourteenth century, in the heads of the window lights, which I took much trouble to get tracings of. The church was "restored," and they all disappeared.

The noble church of Cley-upon-Sea, in Norfolk, had, when I saw it three or four years back, an original roof of the fourteenth century; certainly much decayed. It has now, I hear, been replaced by one of the meanest and most contemptible kind, not having the smallest reference to its ancient type. Wherever old frescoes are found the clergy set themselves especially against them. In a church I was myself engaged upon in Cheshire, the whole walls were found covered with large figures and other decorations of a most interesting character. Their destruction was decreed. I interfered, and threatened the builder's foreman with dismissal if he carried out the sentence; but they cleverly allowed the question to go by default, and let them be destroyed by exposure to rain, while the roof was uncovered. In another place the gentleman who paid for the restoration set himself earnestly to preserve a most remarkable fresco; but, while his back was turned, a workman, supposed to be bribed by another parishioner, chiselled it off. Even at Eton College, where the walls above the stalls were found to be covered with two ranges of oil-paintings in the manner of the Flemish school of the fifteenth century, the Fellows of the college had one whole range chiselled off from each side of the chapel, and the other range concealed by canopies which had never existed on the old stalls. This act of Vandalism I saw myself being perpetrated. And so it is all through the country; the most interesting features of our old churches are being weeded out through the carelessness, the prejudices, or the deliberate barbarism of those who have to do with them. Nor can the architect in all instances prevent this. I have now a church in hand where, an enlargement being necessary, I had arranged it with special reference to preserving a curious fragment of extreme antiquity; but the builder, who could not conceive why so scrubby a bit should be retained, took it down, asking no questions, and, in spite of my earnest remonstrance, has gone on finding one bit after another of old work to be too far gone for retention, and has let the old wall-painting, for which the church was celebrated, perish from exposure; indeed (having no clerk of the works), I was obliged to threaten the builder with extreme severity to induce him to spare anything at all. The fact is, that unless one is always at the spot, or has there a representative imbued with the right feeling, there is little chance for a building when once any portion has to be rebuilt, and sometimes, I fear, when the architect is on the spot, he does much the same thing, and perhaps even avails himself of his proximity to press with the greater success his anti-conservative suggestions and arguments.

I will here offer a few suggestions which may possibly be of some utility.

First, I have found it in some degree useful to have a code of rules and suggestions drawn out and lithographed for the guidance of clerks of the works and builders who are engaged in restorations. I take the liberty of laying one of these papers on the table, but will mention that they are of little use unless constantly pressed personally upon the attention of the parties concerned.

Secondly, The great enemy to careful restoration are contracts. The best course would be to carry them out by day-work, feeling one's way in the most timid and careful manner, and always striving to do as little as is practicable. When contracts are necessary a series of small contracts is better than one general one.

Thirdly, It is highly desirable to avoid uncovering a roof all at once. When re-roofing or re-covering the roofs is necessary, it is best to do it in small parts, and keep the rain out by temporary expedients as you go on.

Fourthly, It is often the case that the exterior of window tracery is hopelessly decayed, while the internal half remains sound. In such cases I hold the proper course to be the renewal of the outer half alone, attaching the new work by plugs and cement. We thus retain one-half in its original form, and ensure the correctness of the other half.

Fifthly, Patching and piecing, if done carefully, are infinitely preferable to more wholesale renewal. The various cements which we have now at our command enable us to introduce the smallest pieces into decayed or mutilated mouldings, which was formerly impracticable. Where the injury, however, is unimportant, it is better to leave it untouched.

Sixthly, Never trust a clerk of the works, or any unpractised hand, to obtain the sections of mouldings, or the forms of other features to be restored. It is often difficult enough to persons whose eyes and whose instincts have been

* A paper read by G. G. SCOTT, Esq., before the Royal Institute of British Architects. Continued from page 32.

sharpened by the habit of studying ancient features through a long series of years; to those who have had no such advantage, it is simply impossible, and one need not be astonished to find them, even with nearly perfect copies before them, producing forms scarcely resembling the original at all. I have often known them, even when they have passed a saw-curl (according to their somewhat barbarous custom), through a moulding, and ruled off its section, produce a result totally at variance with the old moulding.

Seventhly. Where an ancient feature has been destroyed never attempt its restoration till the parts round where the original existed have been thoroughly opened out and explored, and, where possible, in your own presence. Old fragments are in such cases nearly always discovered, and usually in great abundance and near their proper sites.

Thus fragments of a destroyed window are usually found in the wall which blocks up or surrounds the old opening. Blocked up niches, sedilia, or piscinae, commonly contain each their own debris.

Often, however, these are not quite sufficient to perfect a design, and the skill of the architect is taxed to the very utmost to judge what the rest would be.

This resembles the labors of the palaeontologist, who reconstructs the skeleton and the animal from a few broken bones, and, as in his case, the work is impossible to any but one thoroughly acquainted with his subject.

This is, indeed, a most important branch of the subject, and is by far the most interesting and cheering phase in restoration. In the hands of an experienced and painstaking restorer, it often happens that a design which had been almost utterly lost is, in a very great measure recovered; but this can only be done by long and patient study of the fragments discovered; and the work should be indefinitely postponed until these can be thoroughly explored and thoroughly studied. Too much stress cannot possibly be laid upon this. It is the very pith and marrow of restoration. If neglected it is destructive to the work, though if carried out fully, it is the great redeeming fact which compensates for many of the annoyances which restorations involve.

In such cases all the fragments which can be by any means grafted into the restored work, should be brought in at whatever cost. In difficult cases let the architect stick to it hard and fast, until his difficulty is solved; and let him set as lightly as possible by the conjectural theories which, one by one, occur to him, for he may almost depend upon it that they are wrong. With the single exception of Professor Willis, I never met with a man who could make guesses on which a moment's reliance could be placed. He does so simply because he has a wonderful intuitive power of putting together evidence in his mind which few possess, and still more because he never makes a guess until he has collected and thoroughly weighed his evidence. He has swarms of imitators whose practice is the very reverse. To begin with they only half understand their subject, and they build upon this defective foundation a superstructure of guesses running ahead of the evidence, and stuck to religiously after proof has been found of their fallacy.

To those who have not such intuitive perceptions, the only course is not to guess at all, or to set so loosely by your theories, that they may, one by one, go to the winds without a moment's regret, as fast as adverse evidence presents itself. I remember once investigating the design of a very much altered and mutilated window, when, after constructing a most satisfactory theory, a little bit of evidence turned up, which not only let it all down with a run, but involved the whole question in new obscurity. An excellent young assistant who was with me exclaimed, in a fit of impatient vexation, that he wished to goodness we had not found that nasty feature, for it had spoiled all our work. I replied, "Never regret evidence, however vexatious; for, depend upon it, it must lead to a right conclusion, or, at least, prevent wrong one." However, I could not at the time see my way through it; but some time afterwards, while away, a new thought occurred, and I went back and told my assistant that if, on cutting into the wall at a certain point, he found a certain feature, I could unravel the whole mystery. This was searched for, and found, and the whole of the evidence at once fell into its place; and the only remaining wonder was, how we could have been so stupid as not to think of so obvious a thing before. At other times, however, the result is so completely different from what we could possibly have anticipated, that one's wonder rather is, how one could have ever been so conceited as to venture upon any conjectures at all.*

THE BRITISH MUSEUM READING-ROOM.

WE have received the following official return of the number of tickets of admission to the reading-room, issued from 8th January to 31st December, 1861:—New tickets, 2,705; renewals, 4,850; Total, 7,555. The number of temporary admissions has been 827; and the total number of readers who have used the reading-room from 8th January to 31st December, 1861, 130,410.

THE QUEEN RAILWAY HOTEL, CHESTER.

THIS building, illustrated in our present Number, is approached by a covered arcade from the station. It is built of red brick, with Portland cement dressings; the roof is covered with Bangor slates. The interior accommodation consists of upwards of one hundred bed-rooms, with coffee-rooms and private sitting-rooms arranged on the ground and the one-pair floor. The total cost was about £15,000. It was executed from a design by Mr. T. M. Penson. A portion of the building was destroyed by fire in December last, and is being rapidly restored by Messrs. Clark and Jones, of Manchester, under the direction of Messrs. Cornelius Sherlock and Penson.

SCULPTURE CONTRIBUTIONS TO THE EXHIBITION OF 1862.—We understand that the colossal statue of "Cromwell" has just been successfully cast in metal by the Coalbrookdale Iron Company, Shropshire. This statue is intended to form part of the contributions of that celebrated firm to the forthcoming International Exhibition.

TO CHISEL THE WARPING OF PLANKS.—The face of the planks should be cut in the direction which lay from east to west as the tree stood. If this be done, the planks will warp much less than in the opposite direction. The strongest side of a piece of timber is that which in its natural position faced the north.—*Mechanic's Magazine*.

* To be continued.

PROFESSOR S. SMIRKE'S LECTURES ON ARCHITECTURE AT THE ROYAL ACADEMY.—LECTURE I.

THE first of a series of lectures on Architecture at the Royal Academy was delivered by Professor SMIRKE on Thursday evening, the 9th inst. The following is the first portion of the lecture:—

Early in the seventeenth century an Italian writer, Teofilo Gallaccini, composed a treatise of some ingenuity and merit, on the Errors of Architecture, and certainly he succeeded in bringing together a mass of architectural errors (horrors I might say), so shocking as to reflect no small discredit on the practitioners of his day. That day, it is true, was one of great darkness in his art. By an unfortunate accident it coincided with the date of the greatest activity, influence, and wealth of the followers of Ignatius Loyola, when churches and seminaries arose in great profusion over a large part of Christendom; hence that era was then and still remains distinguished from all preceding and succeeding times by the prevalence of, perhaps, the worst architecture that has yet been devised by human ingenuity. Not that the Jesuit's style of architecture, as it has been called, may not be admitted to be sometimes picturesque and bold—so much so, indeed, as to be occasionally most theatrical in its effects; but so entirely were all the rules of composition, I should almost say of common sense, ignored and outraged—so entirely was the sober truthfulness of our art disregarded—that I feel satisfied that I am confining myself to strict truth when I say that to the society founded by Loyola our art owes indirectly more of its degradation and decay than to any other school or individual whatever. Of course, I do not impute personally to himself any influence over the style which the buildings I refer to tended to propagate: I only regard him as founder of a religious society, who became the unconscious instruments of establishing a vicious school of architecture at a very unfortunate epoch of architectural activity. The author to whom I have above adverted had the great merit of seeing more clearly than his contemporaries the faults of contemporary art, and he deserves to be recorded among our worthies for his boldness in contending against the monstrous errors and absurdities that had sprung up with a luxurious rankness and rapidity which are really remarkable.

The very commencement of the sixteenth century, namely, the age of Bramante, of Raffaele, of Peruzzi, and Giulio Romano, was, as I have on a former occasion shown, in many respects worthy of being regarded as the culminating period of modern architecture; and the end of that same century saw the art, if not at its lowest ebb, at all events in a state of deplorable impurity. It is an old remark that all evil is but the corruption of what is good; and it seems to be in the nature of a law that no sooner has a point of excellence been reached than a process of deterioration commences. Fortunately, there would appear to be a co-existent law of social adjustment, for no sooner have we reached a state of apparently hopeless and helpless imbecility, than a glimpse of better things appears to restore our hopes and to redress the balance. The course, in short, of most human affairs may be correctly represented in a diagram by a series of antinodal lines, persistent in their ever varying irregularity.

Such, at all events, appears to have been the course of our art. The great effort of the distinguished artists whom I have named appears to have been—first, to make themselves thoroughly acquainted with the principles which guided the architects of the great Classic period, and then to devise such departures from the style of that period (still, however, adhering to the principles on which that style was founded) as would enable them to adapt their structures to the greatly altered habits, and to the new civilisation, of their own days.

There can be little difference of opinion among us as to the consummate genius and wonderful dexterity with which these modifications of the ancient manner were effected. Perhaps one of the most prominent modifications was the introduction of a regular fenestration, by which that essential feature, the window, was so treated as to render it a fertile source of beauty and interest. It is true evidences are abundant to prove that whatever may have been the case in still earlier times, windows, with their architraves and other somewhat ornamental adjuncts of like nature, were a recognised feature in Roman architecture; but I am aware of no ancient building having its various floors marked by uniform ranges of windows as decorated features, such as we find especially characterising the architecture of the Renaissance.

Another source of beauty, wholly unknown to Classic art—namely, the balustrade, is also due to the originality and inventive genius of the quattro-centists; and it is curious to note the avidity with which artists learnt to avail themselves of this novel and ingenious mode of turning so prosaic and utilitarian an object as a parapet into an ornament of great æsthetic value.

The systematic superposition of several regular orders was another practice particularly affected in renaissance architecture. It had, indeed, been suggested by the magnificent amphitheatres of the Romans, as well as by a rare instance or two of still earlier date, but was certainly not practised by that people generally, either in temples or in their domestic buildings. I have enumerated some of the more prominent characteristics of Italian art, which stamped it with originality, and gave birth to a school as widely differing from the primitive, strictly classical, school, as from the medieval school, which it supplanted.

Such was architecture at the beginning of the sixteenth century in Italy, then the instructress of Europe in the fine arts, as well as in most other branches of intellectual culture.

I have on a former occasion dwelt at sufficient length on the phases of our art down to this period—a period which, again adopting the language of a kindred science, may be regarded as an antinodal axis. A downward course here commences. It is an ungrateful task to record the weaknesses of men and the errors of genius; but perhaps it is a useful one. Perhaps there may be as much advantage derived from inquiring how and why art decayed, as in marking and admiring its growth and elevation. Such, at all events, is the task which I have this evening imposed on myself.

To inquire why art decayed after it had arrived at a point of great excellence is, perhaps, equivalent to inquiring why genius is erratic, why we are unstable in our judgment, and why human fancy is like the fabled bird of paradise, that exists only when on the wing.

Had the men who followed the bright period to which I have adverted been plodders on the highway of art, without soul or invention, and content to follow with painful exactness the footsteps of their predecessors, we might, perhaps, have seen an age of good imitators, and of a level platitude; a race of tame transmitters of the excellence of others, productive of a perpetual repetition of approved forms and established models.

But very far otherwise was the case. Art, in all its branches, throughout the sixteenth and even the seventeenth centuries, was in a state of excitement and

activity.' Vasari, writing in the middle of the sixteenth century, vaunted that such was the fecundity of art and facility of execution in his time, that six pictures could then be painted within the time occupied by the previous generation of painters on a single picture. The simple-minded historian of art seems to have been hardly aware that his vaunt implied rather reproach than praise; although it is true he has elsewhere amused his readers by the anecdote of an eminent painter who, at his easel, when called to his meal, replied that he would come directly, "for he had but one saint more to paint."

The growth of public wealth and the progress of civilisation brought into existence hosts of artists and of patrons of art. Popes and Potentates vied with each other in the patronage of it, and even kings would condescend to bid against each other for the corporal possession and exclusive monopoly of some favorite practitioner.

The consequences of such excessive stimulus were obvious and inevitable. Prosperity begot reckless and careless extravagance, and extravagance led to a rapid deterioration.

The real laborious artists of the fifteenth century wrought, no doubt, slowly and painfully,—urged onwards not so much by a thought of lucre or applause, as by a deeply felt love of their art; whilst the flattering crowd of artists who filled the scene in later times were the spoiled children of fortune, painting and carving and building with wonderful dexterity and readiness of execution it is true, and with a wonderful facility of invention in devising new shapes and fashions and fantastical combinations, but without that earnest, ardent, painstaking, and simple severity of study which had conducted their forefathers to real excellence.

By way of illustrating the vast change that had taken place during the sixteenth century, let us compare the works of Bramante, who flourished at the beginning of that century, with those of Borromini, who was born at the end of it. I have on a former occasion dwelt on the peculiar merits of Bramante. His was a pure, honest architecture, perfectly free from affectation and conceits of any kind whatever. His style appears to me to be all the more captivating from the very absence of all *ad captivandum* contrivances, and all the more effective from its manifest freedom from all seeking after effect.

If we turn from him to Borromini, we shall be shocked to see what devastation and corruption of taste had taken place during the one hundred intervening years.

The one sought to charm by his purely architectural feeling, aiming, for the most part, at those high qualities—order, symmetry, and rhythmical arrangement—which the great father of architecture, Vitruvius, had long before pointed to as the distinguishing character of good architecture; whilst the other set at defiance all order and moderation. The one never feared to draw a straight line, unless the requirements of his work seemed to render a curved or a broken line preferable for some special purpose; and surely a straight line seems to be, of all others, the line of architectural fitness, and therefore of beauty; whereas, Borromini must evidently have abhorred such a line above all things. He it was who, of all men, contributed most to the introduction of that system of architectural design (if it can worthily lay claim to the dignity of a system) by which masonry lost its special character, and its most appropriate forms. His façades curved inwards or bulged outwards on their plan, as if made not of hard stone, but of some yielding and plastic substance; and his pediments, totally forgetful of their primitive form, offered every variety of intricate convulsion and distortion.

Bramante called in the aid of sculpture with that charyness and caution which plainly indicated how highly he appreciated its noble attributes and fitting application; and as if he feared to vulgarise it by too frequent a use of it, or by excess of any kind. Yet, highly as he appreciated sculpture, he never permitted it to encroach upon the proper limits of his own special art. Sculpture was used by him as an honored accessory, well calculated to stamp a moral value on his work, and to give it a grace beyond the reach of mere architecture.

Borromini, on the other hand, permitted sculpture to dominate over the main object of his art without restraint; his whole building was literally sculptural, and his masonry was left to the humbler duty of forming a mere vehicle for the consolidation of some fantastic piece of clay modelling. Such had been the downward progress of architecture during the period to which I have been adventuring.

It must not, however, be supposed that the transition was sudden, or even rapid. The activity and energy of the sixteenth century were wonderful, and led to perpetual changes, and were constantly giving birth to novelties. New schools were founded, and eminent masters appeared in rapid succession, and of most opposite characters. Sansovino, with his superabundant wealth of sculptural resources; Palladio, with a moderation and purity of feeling far beyond his fellows; Michel Angelo, whose length of life enabled him to see out most of the brightest lights of Italy, although he was himself a fellow-laborer with some of the earliest and ablest masters of the great Italian Renaissance. Still, though the course of architecture was an onward course, yet it was also a descending course. The art lost its dignity, and became frivolous and trifling. Every part of a building seemed to be, as it were, in restless movement; curved lines were broken and inverted; straight lines were perpetually interrupted or diverted, and all breadth was frittered away by a multitude of lights and shadows.

It is worthy of note how great a sympathy has always seemed to exist between our art and that of the sculptor. Whether dignified and severe, noble or mean, natural or conventional, grand or grotesque, those two sister arts seem ever to have proceeded hand-in-hand; for ever sharing the same fate: rising together into greatness and sublimity, and together sinking into painful imbecility. Without going too far back into the history of art (although in remotest times the sympathy between the two arts was eminently conspicuous), we shall find the observation hold good in Medieval art. The culminating period of ecclesiastical architecture was precisely that which has been eulogised by our Flaxman as distinguished by high sculptural excellence. The quattro-centist introducers of modern art in both these branches shared like feelings, and were remarkable for like excellences. The sculpture of Donatello, like the architecture of Alberti, was alike vigorous and original, and full of delicacy of feeling; these high qualities being in both arts somewhat qualified, it is true, by a certain degree of hardness and rigidity. In Michel Angelo we find the same colossal and masculine breadth, whether we regard the examples he has left us of his sculpture or of his architecture.

Then, coming down to the epoch that more particularly engages our attention this evening, we shall find the same debasement pervading the two arts. I have already said that one of the marked characteristics of the architecture of the seventeenth century was that of restless movement; so also the sculpture of the seventeenth century exhibits, in an especial manner, the absence of that tranquil

dignity which is particularly becoming in sculpture, especially when applied as an accessory to architecture. A want of repose is almost equally offensive in both the arts. The eye is fatigued and the attention distracted by an excessive flutter in the details, whether we contemplate a building or a group of sculpture. Bernini set the example, but Borromini went far beyond him in this vicious treatment of the sculptural accessories of their respective buildings. Indeed, one of the most repulsive faults of sculpture at this degenerate period was its utter want of repose and the inordinate love of representing agitated drapery.

It is said of Bernini, by Milizia, that, although he was himself far from a pattern of sobriety in this respect, he yet knew enough of his art to condemn the fault in others. Remarking, on one occasion, the extreme agitation of St. Veronica's clothing under the dome of St. Peter's, he sarcastically inquired of the sculptor from whence the wind came that so seriously disturbed the Virgin Saint's drapery, seeing that she stood protected within the walls of the edifice. The sculptor, fortunately for him, had an answer that effectually disconcerted the critic: "The wind," he replied, "obviously came through the serious fissures in the masonry of the dome, occasioned by the critic's (Bernini's) want of skill in destroying the stability of the piers of that dome"; Bernini having shortly before somewhat rashly interfered with Michel Angelo's piers, by the insertion of colossal niches excavated out of the substance of those piers. Such were the mutual reprimands of these two most eminent artists, who contributed so largely to the degradation of their art. I am confident that I am using no extravagant or inordinate expressions, when I designate the architectural sculpture of the 17th century, in its treatment and mode of introduction, as ridiculous and absurd. Their sculpture may probably have been designed with boldness and vigor, and executed often with a masterly dexterity; certainly we cannot justly charge it with tameness or insipidity. Its faults were, indeed, exactly the reverse. There is a grotesque energy, a violence of gesticulation, which is, perhaps, very true to nature, if we seek nature in the wine shops of the Campagna, or among the Lazzaroni of the Chiaja; but the united voices of all cultivated artists will concur in condemning that style of nature as unfit for the study and imitation of sculptors.

A painter may, with perfect propriety, impart whatever degree of violent action his subject may demand; his pencil undertakes to realise to the eye actual scenes and if intense action is to be represented, he is most successful who best realises on the canvas that intensity. The case is, as it appears to me, far otherwise with the sculptor's art, at least when it is applied as the accessory embellishment of architecture. Statues in niches, or on balustrades, or otherwise fringing the sky-line of a building, must, I should think, be subdued, both in attitude and in treatment.*

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.

THE Annual General Meeting of this Society was held at the Architectural Galleries, Conduit-street, on Thursday evening, the 9th inst., when the chair was occupied by W. C. DUTTON, Esq.

The CHAIRMAN said that the President of the Society, the Earl of Ellesmere, who was out of town, had been consulted respecting the propriety of presenting an Address of Condolence to the Queen on the irreparable loss which the Fine Arts of the country had sustained in the death of his Royal Highness the Prince Consort. The noble Earl, in his reply, said:—"I think that, considering the late lamented Prince Consort's enlightened patronage and support of everything connected with Art, nothing can be more appropriate than that the Society should forward an Address of Condolence to her Majesty, upon a loss which they have peculiar reasons for appreciating. I shall be very willing to sign it in my capacity as President."

Mr. JEWELL moved the adoption of the following Address of Condolence to her Majesty, which had been prepared by the Council:—

To the Queen's Most Excellent Majesty.—We, your Majesty's most dutiful and loyal subjects, the President, Vice-President, Council, and other members of the Society for the Encouragement of the Fine Arts, venture to approach your Majesty with feelings of devoted attachment to your throne and person, most respectfully to offer the assurance of our heartfelt condolence in the deep affliction with which it has pleased the Almighty to visit your Majesty, in the premature death of his Royal Highness the Prince Consort. Upon the admirable qualities which illustrated alike the public and the private conduct of his Royal Highness in his exalted station, it is not for us on this occasion to dilate; the respectful gratitude of an entire people recognises them; the page of history will be their enduring record. But in one particular the character of his Royal Highness was essentially distinguished, and his course of action marked out to usefulness and honor beyond all other princes of his age—namely, his love of intellectual progress, his earnest support of all that could promote the application of the lights of science and the dictates of correct taste to the labors of industry, his enlightened patronage and encouragement of the fine arts, and the generous desire constantly uppermost in his thoughts for the extension of their pleasing and improving influences amongst all classes of the community. Under these circumstances the death of his Royal Highness occasions a loss which this Society, with the objects they have in view, have peculiar reasons to appreciate and deplore; and the recollection of them will form an enduring monument to the memory of his Royal Highness in the hearts of your Majesty's subjects and in the estimation of surrounding nations. May your Majesty also, in recalling them in after years, experience some consolation for your Majesty's late bitter bereavement. That your Majesty may long live to preside over the destinies of a loyal, devoted, and happy people, is the humble prayer of your Majesty's dutiful subjects, the members of this Society.

Mr. ATKINSON seconded the motion, which was unanimously agreed to.

Mr. HENRY OTTLEY, Hon. Sec., then read the following report of the Committee:—

The Council on the occasion of the third annual meeting of the members of this Society are happy to be able to report most favorably of its progress, and of its future prospects. The number of members has considerably increased since the general meeting last year, amounting now to 269, upwards of 60 having been added since the close of the last session. Amongst the new members, the Council have pleasure in recognising the names of several artists of distinction in the various branches of art, who in joining the Society have given the best practical evidence of their approval of, and sympathy with its objects. Additional strength, however, would still be desirable to enable the Society to carry out with greater efficiency the scheme of operations contemplated at its formation. The Council therefore venture to hope that members who by experience are aware of the usefulness of the Society, will exert their influence to procure amongst their friends new accessions to its ranks. For this purpose prospectuses, with programmes for the year, and forms of application for membership have been prepared, copies of which, members are invited to provide themselves with, to be made use of as occasion may serve.

A printed book of the rules of the Society, containing also a list of members corrected down to the present date, will be issued to all members in the course of the current month. A new edition of this book, with the list of members duly revised, will be issued at the commencement of every year.

The course of lectures given last year, for the first time, in fulfilment of one of the announced objects of the Society, proved highly successful, the lectures so kindly volunteered by members and others having been numerous, and the instruction they afforded very generally acknowledged both by those who heard them and those who heard of them in the columns of the press. A completely new course has, thanks to the same generous spirit of co-operation, been organised for the current year, many of the subjects having been selected with a view to the illustration of the Fine Arts Department of the International Exhibition of 1862. Members are informed that, with a view to the extension of the usefulness of these discourses, as well as to making more widely known the operations of the Society, they will be entitled during the current session to issue tickets of invitation to the lectures, in addition to the privilege of personally introducing a friend. These tickets may be had on application to the honorary secretary, or to the assistant secretary.

The prize system first put in action in the last session has been attended by most gratifying results; the judgment displayed in the award having met with general recognition, and the honours themselves having been acknowledged in flattering terms by the recipients. The prizes awarded in June last will be distributed at the first *conversazione*, instead of at the general meeting this evening, in order to give greater *clat* to the proceedings.

In the course of the last session *conversations* were held at the Mansion House, by kind permission of the Lord Mayor, one of the Vice-Presidents of the Society, at the Galleries of the Society of British Artists, of the Fine Arts Institute, of the Architectural Society, of the Architectural Photographic Society, and at the French Gallery, by kind permission of the respective societies and owners, to whom a vote of thanks will this evening be proposed.

On the occasion of these *conversations* musical artists of eminence came forward in the handsomest manner to lend their valuable services in aid of the intellectual enjoyment of the evening. To these ladies and gentlemen, as well as to M. Jules Benedict and Mr. Alfred Gilbert, who so ably conducted the musical arrangements, the warm thanks of the Society are especially due.

The arrangements for the *conversations* for the current session will be announced by a card to be sent to all members in the course of the first week in February. Considering the world-wide importance and interest attaching to the Great Art-gathering to be expected amongst us in the course of the ensuing summer, the Council, in conformity with suggestions made by several members, are desirous, if circumstances will permit it, to organise, in addition to the usual six *conversations*, a special reunion in honor of the distinguished foreign artists who may visit this country on the occasion of the International Exhibition, and they will be happy to receive co-operation or suggestions from members who may approve of that proposal, towards carrying it into effect.

After some conversation on the subject, Mr. JUKES proposed: "That a special general meeting of the Society be called, for the purpose of considering the propriety of giving a special entertainment by the Society to the foreign artists who might visit this country on the occasion of the opening of the Great International Exhibition."

Mr. RIVINGTON seconded the motion, which was agreed to.

MEMORIALS TO HIS LATE ROYAL HIGHNESS THE PRINCE CONSORT.

ON Tuesday a public meeting, convened by the Right. Hon. the Lord Mayor, was held in the Egyptian Hall at the Mansion House, "to consider the propriety of inviting contributions for the purpose of erecting a lasting memorial to his late Royal Highness the Prince Consort, and to adopt such measures for carrying out the object as may then be decided on," when the following resolutions were agreed to:—

That this meeting, deeply deploring the irreparable loss the country has sustained by the lamented death of his late Royal Highness the Prince Consort, whose powerful and well-regulated mind and great abilities have for more than twenty years been incessantly devoted to improving the condition of the humbler classes, and to the development and extension of science and art, and to the judicious education and training of the Royal family, is of opinion that a lasting memorial should be erected, commemorative of his many virtues and expressive of the gratitude of the people.

That the memorial recommended should be of a monumental and national character, and that its design and mode of execution be approved by her Most Gracious Majesty the Queen.

That committees throughout the United Kingdom be formed to raise subscriptions to the proposed memorial, and that her Majesty's subjects be invited to subscribe.

That a committee be formed, consisting of the following noblemen and gentlemen, to carry into effect the foregoing resolutions, with power to add to their number; and that the Right Hon. the Lord Mayor be president of the same, and treasurer of the fund.

The sum subscribed at the close of the proceedings amounted to about £4,000. Among the donors were—The Society of Arts, £1,050; the Lord Mayor, £100; Baring Brothers, £210; Rothschild and Sons, £210; Coutts and Co., £210; Gosling, Sharpe, and Co., £100; the Marquis of Ormonde, £105; Smith, Payne, and Smith, £100; Jones Loyd and Co., £100; Glyn, Mills, and Co., £100; Lord Kingsdown, £100; Overend, Gurney, and Co., £100; the Bishop of Exeter, £100; Mr. George Cubitt, M.P., £100; and Mrs. Cubitt (Denbies), £100.

At a public meeting at Manchester a resolution to erect a "fitting monument" was passed; the Mayor offering £500 towards a marble statue. Among the proposals was one to place a statue within a sort of temple. The idea should not be allowed to fall to the ground.

RATING OF BETHLEHEM HOSPITAL.—ARBITRATION.

LAST week a special meeting of the parish officers was held at the vestry hall, St. George's, Southwark, when the assistant officer officially presented the award of Mr. George Pownall, to whom the pending issue had been referred, whereby the annual value of the building grounds and premises was adjudged to be £3,075, and, inclusive of the house of occupation, £3,728. It appeared that the governors had instituted an appeal to quarter sessions against their assessment, which, according to the valuation of Mr. Charles Lee, was claimed to be rated at £1,800 a year. The parish officers in this instance retained Mr. John D. Paine, who had previously surveyed the parish, and whose valuation was somewhat over £4,000 for the hospital property. Mr. Pownall's award of £3,728 is, however, mutually binding on all parties.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post*. Gold watches 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enables persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

J. W. BENSON, 33 and 34, Ludgate-hill, 46 and 47, Cornhill, London, E.C. Established 1749.

Correspondence.

SIR,—The monster evil which we particularly in the building trade have to contend with is that of strikes. Strike is the order of the day, and for a time has run rank as a murrain amongst the working classes of this country; an infatuation which no amount of reasoning or argument can change or even modify. What with our cheap and free institutions, &c., all got up with praiseworthy effort for the intellectual advancement of the working-man, it is to be deplored that we still find him with "strike" for his motto. Strike is the way in which he will reason, and strike is his argument and weapon with which he deals out destruction and misery to all concerned.

It matters not how absurd and unreasonable his demands may be, or how unprepared the employer is for such advance with hundreds or it may be thousands of pounds of contracts, all obtained and calculated from the cost of labor previous to such demand. It matters not what agreement may have been entered into, if such agreement be binding only by honor; for example take the plasterers of Manchester at present out on strike.

In the rules last supplied to the employers by the body or Association of Plasterers in Manchester, vide rule 8th, is the following clause—viz., "Either party wishing to make any alteration in the rules to give three months' notice in writing, the notice to expire between the 1st of May and the 1st of August ensuing." Yet whilst they have now struck work with two weeks' notice, and that not in writing, and in several cases without any notice whatever, for a further reduction of three hours per week in winter.

It is only a few months since they had three hours conceded to them, thus making 51 hours per week, 4½ hours less than in summer, and for which they are only reduced 1s.; another concession on our part, as they were up to last winter reduced 2s. for the 4½ hours. The disputed 3 hours per week for which they have turned out would bring the total to 48 hours, 16 of which they work by candle light, and, considering the nature of the employment, is not equal to 8 hours of daylight, and when employed outside they work from light to dark, this actually would make the entire week consist of less than 40 hours; which, with the summer hours of 55½, gives an average of 52 the year round.

The present average is 54½ and with the wages paid, the plasterers of Manchester, taking all into consideration, are already in advance of any other branch of the building trade in Manchester, if not in England.

All this we have explained to the workmen and reasoned with them, in every way, anxious if possible to avoid any hostile movement.

Until the contracts in hand were finished, we even offered them the 3 hours per week; that is, to have breakfast and begin work at half-past seven, our object being to reduce as much as possible the unprofitable, and to themselves dangerous, candle-light work, but they indignantly refused the offer.

We then proposed to have the matter settled by arbitration, this they also refused, and as we are unable to bear any additional burden, the profits of the trade having already been reduced until it is almost impossible to live by it, the prices being considerable lower now than they were 15 or 20 years ago, while the cost of labor is 40 per cent. higher, we have now no other alternative but to apply for other, and it is to be hoped more conscientious and reasonable workmen, and to appeal to our architects and the public for their assistance in carrying out our object against an unjust, and unwarrantable strike.

A MASTER PLASTERER.

Manchester, 13th January.

THE OBSTRUCTION AT THE EUSTON AND HAMPSTEAD ROADS.

SIR,—It is not at all surprising that "An Inhabitant of the Neighbourhood" of the obstruction in the Euston and Hampstead roads, should express the dissatisfaction which those living in the locality feel. It is felt as an universal reproach to all the authorities who have the control of the building departments of the metropolis. Where can the fault lie? * * *

Whoever of these is in fault, the public has suffered a great wrong, and a deformity has arisen in one of our finest thoroughfares, which in the city of Paris would not be allowed to exist one week. If the Metropolitan Board does not possess sufficient power to prevent a re-erection, which was originally a great blot, when it has once been taken wholly down, let them go to Parliament for increased powers. The great end for which it was created, was to prevent deformity in our streets, and I very much doubt if they can find one more prominent than the erection at the corner of the Euston and Hampstead roads * * *

A LOVER OF JUSTICE.

TENDERS.

VILLA, CROYDON.

For the erection of a villa, at Croydon, Surrey, for J. J. Segar, Esq., of West Derby. Quantities supplied. Mr. William Pace, architect, Temple-chambers, E.C.

Clark	£810	Poster	£790
Thomas	798	Hart	777
Colls and Co.	797	Wilkins and Bottom (accepted)	761

CHURCH, LAMBETH.

For building new Church in the Kennington-road, Lambeth. Mr. H. E. Coe, architect.

Patman and Fotheringham	£5,685
Willson	5,897
Higgs	5,389
Hill, Kidel, and Robinson	5,371
Thompson	5,362
Dowds	5,039
Jackson and Shaw	4,997

GATES AND PALISADING, HULL.

For entrance gates and palisading, Pearson-park, Hull.

Messrs. Newton, Chambers and Co., Thorncliffe Iron Works, Sheffield.	
Palisading, per lineal yard	9 3
Private Carriage Gates	£8 15 0
Private Hand Gates	4 15 0
Messrs. Young and Pool, Hull.	
Public Entrance Gates	£330

TO CORRESPONDENTS.

We cannot undertake to return rejected communications. WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favor us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

J. M. H.—Thanks.

T. C. B. (Bradford).—Shall appear.

C. M.—Plans only were engraved; they have been given.

R. X.—We cannot enter into such a discussion.

M. W.—In our next.

I. B. A.—Under the circumstances we cannot allude to the matter; we have received several communications on the subject.

J. L. C.—Shall hear from us.

B.—See notice in our last Number.

R. M. P. (Gloucester).—A view will be given in a few weeks.

S. H.—Thanks deferred for want of space.

RECEIVED.—H. B. Messrs. K. and W. James L. F. A., A Subscriber from No. 1, Pharaoh.

C. Anti-Strike, R. E. R., Canberwell, Z. Y. M. I. B. A., An Inhabitant of Islington, The

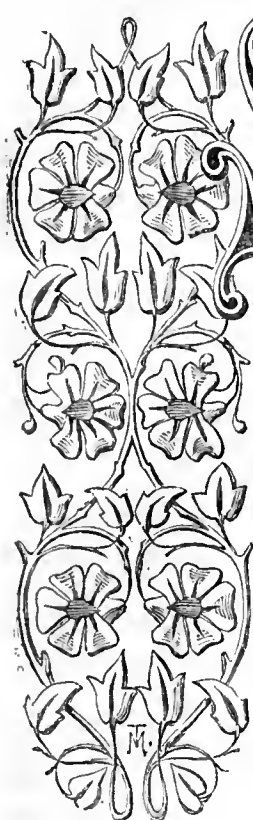
Architect, M. Z., Mr. Jameson, P., W. Y., A Builder's Clerk, N—Y, F. E.

*** All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old

Bowell-court, Strand, W.C., except letters referring to advertisements or other business matters,

which should be addressed to the Publisher, 18 to 21, Old Bowell-court.

SANITARY CONDITIONS OF UPPER AND MIDDLE CLASS DWELLINGS.



SANITARY reformers and wealthy philanthropists appear to have been so intent upon improving the dwellings of the laboring classes, that they have sadly neglected the condition of their own homes, until they are made to pay the penalty for disregard of cleanliness in the shape of increased preventable mortality. Their conduct is a melancholy illustration of the tendency to wish to pluck the moat from a brother's eye and not see the beam in our own. Not that we are insensible to the advantages which have resulted from the labors of the rich to ameliorate the state of the habitations of the poor; but that we believe cleanliness like charity should begin at home. Example is a far more influential teacher than precept.

The report for last Saturday week of the Registrar-General on the health of the metropolis, reveals the sad fact that in the week preceding the rate of mortality had increased. The total number of deaths was 1,561 in that short space of time. The average number of deaths in the corresponding weeks of the ten previous years—corrected for the increase of population—is 1,440. Making the same correction, it will appear that 17 deaths occurred daily in the last week tabulated, over and above what should have been the death-rate according to averages, if no disturbing influence had been introduced. The increase beyond is much greater than it appears to be, when

we take into consideration that every year beholds an extension of drainage works, and a general improvement in the conditions of life within the metropolitan area that should go, but for the influences just alluded to, in the reduction of the average mortality. An increase in the average represents more than mere figures show; it points to the neutralisation of sanitary improvements. For all practical purposes so far as regards the saving of life, the enormous and costly improvements effected during the last ten years have been utterly useless. The money has been thrown away; for the metropolis is in a worse sanitary condition than it was during that period. To what extent it is worse, may be represented by saying, that the influences inimical to life are 1·4 per cent. greater than they have hitherto averaged, or that a Londoner's chances of life are diminished something like one and a-half per cent.

In presence of an increased death-rate, the first thing is to seek for its causes. Defective drainage cannot be the only one for, on the whole, it has improved, although in some localities it may be worse. There has been no fall of temperature till the last week to account for the excessive death-rate, for it has been 7·2 degs. above the average of the corresponding weeks during the last forty-three years. On three days the temperature was from 12 to 14 degrees above the average in warmth. Consequently, so far as thermometric influences are concerned, there should have been a diminution in the average mortality. Trade was not exceptionably bad, and if there have been want of employment and stinted food, they have certainly not gone beyond the average. Up to the present time the poor have not been exposed to unusual sufferings. We are, therefore, driven to conclude, in the absence of epidemic and of everything in the shape of contagious diseases, that the causes of an unusually high death-rate are to be sought in the water supply, and in partially defective drainage; and the data supplied from authoritative sources justify these conclusions.

First, as regards the water supply. We will take the three periods of 1851 before the companies were compelled to filter their supply, and to take it from purer sources than formerly; 1856, when the improvements had come into effect, and the last month of 1861.

		Organic Impurity Per gallon.	Total Impurity Per gallon.
		Degs.	Degs.
Grand Junction.....	1851	3·07	21·72
"	1856	1·38	22·59
"	Dec.. 1861	1·80	21·36
West Middlesex.....	1851	2·75	22·67
"	1856	0·96	21·03
"	Dec.. 1861	2·40	21·76

		Organic Impurity Per gallon.	Total Impurity Per gallon.
		Degs.	Degs.
Chelsea.....	1851	2·38	21·28
"	1856	1·42	22·79
"	Dec.. 1861	1·76	19·72
Southwark.....	1851	1·51	21·08
"	1856	1·37	21·19
"	Dec.. 1861	2·40	21·06
Lambeth.....	1851	2·59	20·40
"	1856	1·33	19·84
"	Dec.. 1861	2·64	20·44
Kent.....	1851	2·61	20·71
"	1856	1·37	26·10
"	Dec.. 1861	2·64	25·16
East London.....	1851	4·12	23·57
"	1856	1·09	22·05
"	Dec.. 1861	1·36	21·08
New River.....	1851	2·79	19·50
"	1856	0·968	21·78
"	Dec.. 1861	0·72	19·72

A comparative analysis of these figures will show that the organic impurity of the water we use to drink and cook now, has been augmented beyond that of the water in 1856 to the following extent:—Grand Junction, 0·42 deg.; West Middlesex, 1·44 deg.; Chelsea, 0·34 deg.; Southwark, 1·03 deg.; Lambeth, 1·03 deg.; Kent, 1·31 deg.; and East London, 0·27 deg.; while the organic impurity of the New River Company has been further diminished by 0·248 deg. We shall certainly not take upon ourselves to say that the increased organic impurity of the water supply is the only cause of the increased rate of mortality within the metropolis; but it would be to disregard the important and significant fact that the augmentation of filth in our drink is coincident with an unusually heavy death-rate. There is another remarkable coincidence to be taken note of—the diminished organic impurity in the New River water coincided with a reduction in the rate of mortality in the City of London; according to Dr. Letheby, during the last quarter of the past year the proportion of deaths declined 16 per cent. below the average.

It would be wrong to infer from the circumstances stated that the water companies are responsible directly for the increased pollution of their supply, or that they have neglected any of the onerous duties imposed upon them by the latest legislative enactments. That they have done their best honestly and thoroughly, by the filtration of their supplies, will be evident from an inspection of the table above, which shows that the total impurity per gallon has been diminished since 1851, with three exceptions, and their slight increase is susceptible of explanation by the increase of earthy particles carried down by the augmented volume of water which at this season percolates the soils and drains into the Thames. The diminution of total impurity is due to the efforts of the companies; the increase of organic impurity is due to causes beyond the control of the companies—to the augmented density of population on the area which drains into the Thames, and to the draining of fresh localities into the river. Since 1851 more than half a million has been added to the metropolitan population, whose disjecta conveyed into the river will account for the additions to its organic impurity, without taking into consideration the increase of population in the valley of the Thames above the metropolitan area. The inorganic impurities can be arrested by filtration, which the tables show the companies to have done, but the organic impurities are for the most part, too subtle not to escape the action of filtration. When the intercepting drainage of London is completed, and if sewage be diverted from the Thames, organic impurities will be, doubtless, diminished; but it must always be polluted by the storm-overflows from London sewers, and from the drainage into it of districts above and beyond the metropolitan area. The radical defect in our water supply is that it should be taken from the Thames at all, or, indeed, from any source into which sewage is drained. The new water supply to Paris is to be obtained from streams unpolluted by sewage, and care is to be taken not to allow animal excreta to flow into them. There was a golden opportunity ten years ago of doing as much for London, when the Honorable Mr. Napier pointed out the green-sand formation at Bagshot as sources for supplying us with pure soft water, which would have improved our health, and effected an economy in every household. The opportunity was neglected. The intakes of the water companies were removed up the stream, and we are now paying the penalty for our neglect and folly in the additional filth to the water we drink, and the increased offensiveness of the Thames from its diminished volume.

With regard to drainage, Dr. Letheby points to its defects in quarters not suspected, by his startling revelation of the change in the relative sanitary conditions of the dwellings of the wealthy and of the poor. Fever is, perhaps, the truest indication of defective drainage. Year by year, as cesspools were abolished and filth removed from under the habitations of men, there has been a gradual and steady abatement of continued fever. But during the last quarter, and without warning, the disease made its appearance, and caused a higher rate of mortality than ruled during any other quarter of the five preceding years. Instead of occur-

ing in districts inhabited by the poor, as formerly, fever has "migrated from the haunts of poverty to the confines of luxury." Since 1858 the fever cases attended among the poor by the medical officers of city unions has been reduced from 10 to 3 per cent. of all sickness. Fever is, therefore, in the course of being expelled from the abodes of labor, but as, on the whole, it has increased, it must have fortified itself in the homes of the well-to-do.

Dr. Murchison and Dr. Barker have "almost demonstrated" that the ruling fever is caused by noxious emanations from sewers and drains; consequently, the wealthy districts are worse drained than poor districts. For the explanation of this anomaly we must seek perhaps in the habits of "comfort" of the rich, in the defects of the localities they have chosen to settle on, and in the number of new houses built for the middle and upper classes. As a general rule, in lower class houses, drains have no communication with the interior; the closets are mostly in the yard or without the house. In better class houses they are within, and the better the class the more immediately are they in communication with the dwelling apartments and the bed-chambers, and the more numerous are they—one on every floor. Thus it is impossible to prevent miasms from penetrating into the interior, and being inhaled by the inmates. We do not speak of other arrangements which are imagined to be conducive to comfort, but which are very conducive to sickness. Again, the cisterns in which water is stored for drinking and cooking in better class houses are also employed to flush closets. Is it practicable for some of the miasms to escape into the cisterns, and be taken up by their contents? This is a point on which information would be very acceptable, and which might be easily ascertained by testing samples from cisterns and from mains in the streets. Should the stored waters prove to be polluted, the inhabitants have a complete remedy within easy reach and at trifling cost—the abolition of cisterns and the substitution therefor of constant service. The extra expense for the whole year would not be more than the head of a family will spend in tickets for a night's entertainment at the theatre or at a concert.

Fashion has made its abode in the lowest, worst-drained site in all London. Pimlico, Chelsea, and the neighbourhood lie so low that the sewers are often tide-locked, by which means miasms are driven back into dwellings. Their level is such as to afford no fall for draining into the intercepting sewers, and they will require a separate drainage system, with deodorising processes, to remove offensive matters from their midst. From the evils that spring from site there is no remedy until Mr. Bazalgette's scheme is carried out, which will be tantamount to raising the level, and even then the remedy may prove partial and incomplete.

In ten years 25,000 inhabited houses have been added to those previously erected in the metropolis, and a very large proportion of them are better-class houses. If the reader desires to see how many of them have been constructed in defiance of sanitary rules, let him go on a voyage of discovery in the neighbourhood of Notting-hill and the Regent's-park. He will there perceive new houses without basements, built on the soil, and with damp creeping up the walls from footings to roof, exhibiting itself in mildew and vegetation. The roads are ankle-deep in mud when it rains, unmetalled, and with the vegetable soil left exposed on the surface, interspersed with pools of stagnant water. Of course the drying of the roads necessitates the evolution of noxious gases, which find their way into neighboring houses. Not Agar-town, in the worst phases of its existence, exhibited conditions more unfavorable to health than do some of these new better class of streets. Can it be a matter of surprise, then, that fever should make them its abode?

ROYAL SCOTTISH SOCIETY OF ARTS.

At the fourth meeting of the session of this Society, Dr. NEWBING, President of the Society, in the chair.

Mr. WILLIAM FIRTH, Fellow, gave a description of a plan for forming harbors of refuge. Mr. Firth stated that the plan which he proposed to submit was one of the class known as floating breakwaters. It was founded on the well-known law, that "action and reaction are equal and opposite." The general feature of the plan was to break the waves by means of large pontoons or tubes of iron of great length and of considerable depth. It would be necessary to preserve the tubes from decay, and also from being drifted by high winds. The objection hitherto urged in respect of decay must in the present case be set aside, as, with the facilities now existing for effecting repairs, the same objection ought to apply to the Britannia-bridge and similar structures exposed to the influence of the weather. The quantity of water raised above the mean level or still water-line was almost equal to the quantity left below that line, and it must equally follow that the undulatory motion of the water was confined between two lines, one as much below as the other was above still water-line. The final consideration was that of making anchorage, which had been considered the chief objection to floating breakwaters. If it were considered that the tubes had no pitching motion, and consequently would not jerk the cable and anchor, there was some difficulty in arriving at any need for prodigious power in this element of the plan.

Mr. CUMBERLAND HILL, teacher, George Heriot's Hospital, then read a paper on "An Improved Time Gun Signal." Both papers were remitted to a committee for consideration. A reply to the address of condolence presented to Her Majesty was announced as having been received from the Secretary of State.

METROPOLITAN BOARD OF WORKS.—At the last meeting of this body several contributions were ordered to be made in aid of City improvements in Wadling-street, Newgate-street, and Fleet-street.

ON THE ESSENTIALS OF A HEALTHY DWELLING AND THE EXTENSION OF ITS BENEFITS TO THE LABORING POPULATION.*

IN acceding to the request of the Institute that I would, after an interval of twelve years, again give to its members some of the results of that experience which has been gained in my gratuitous efforts to promote the healthfulness of our dwellings, and more especially those of the laboring population, I feel that, however unattractive the subject may be in an artistic point of view, it has some peculiar claims on your attention, and that many of the difficulties with which it is beset can not only be appreciated, but their solution be probably in some measure aided by those whom I have now the pleasure of addressing.

In my paper read the 21st January, 1850,† reference was made to the great interest taken in this subject by our late illustrious patron, the deeply lamented Prince Consort, and his Royal Highness's own words were quoted, to show that "these feelings are entirely and warmly shared by Her Majesty the Queen," our most gracious patroness. Proofs of an undiminished continuance of that interest, as well as some of its practical results, will be stated in the second part of my present paper.

It would be doing violence to your feelings as well as to my own were this allusion to be unaccompanied by an expression of the most profound sympathy with our beloved Sovereign, for whom we earnestly pray that in this time of overwhelming grief abundant consolation may be granted from above. Shall we not also indulge the hope that ere long a knowledge of the great and wide-spread benefits resulting from the noble principles, highly practical wisdom, and bright example, which, alas! we must now speak of as a legacy left by his Royal Highness for the good of his family, his adopted country, and the world at large, will have their soothing influence on our bereaved Queen, as well as stimulate many to follow so bright an example?

In the grief so universally manifested at the death of this great and good Prince we all participate; but those who were honored by occasional intercourse with that illustrious person, and knew his kindly, courteous manner, must feel the loss more deeply. Some present can, no doubt, bear witness with me to the proof of real interest in the objects his Royal Highness deemed worthy of his attention, which was manifested by a remarkable appreciation of minute details—a characteristic feature of a mind as reflective as it was highly cultivated.

I might select a suggestive motto, suited to the subject before us, from one of the admirable addresses by his late Royal Highness, which it was my privilege to hear at the Aberdeen meeting of the British Association, and at the International Statistical Congress, held more recently in London; but I prefer adopting for that purpose a sentence uttered on another occasion by the ever to be lamented Prince, on account of the deep feeling of responsibility which it manifests, and the important principles which are so peculiarly applicable to my subject. It is the following:—"The blessings bestowed on us by the Almighty can only be realised in proportion to the help which we are prepared to render to each other."

In proceeding to point out the circumstances conducive to the healthfulness of a dwelling, some will be named which cannot be strictly termed "essentials," inasmuch as their absence may be compensated for. Such is the case where localities, though not elevated, have a good soil and are well drained. It may, perhaps, appear scarcely necessary to add that the healthy state of a dwelling will not be insured by any one, or even by the union of several of the features essential thereto, in the absence of others which are of equal importance.

The condition of "healthy," in regard to dwellings, arises out of a combination of circumstances, which comprise—

1. Those appertaining to the locality, including its soil, a free circulation of pure air, an efficient drainage, an ample supply of pure water, and a good aspect.

2. Those which are structural.

3. Those which depend mainly, though not wholly, on the occupants themselves—external and internal cleanliness, and a proper use of structural arrangements.

1. In regard to locality. High and dry situations, having a free circulation of air, whether occupied by groups of buildings, as in towns, or by isolated dwellings, as in the country, are proverbially healthy; whilst those which are low and damp, or surrounded by confined air, are the opposite. Experience, afforded by the state of troops when encamped, or when in permanent barracks or in hospitals, is conclusive on this point. It is a known fact that the mortality of troops in Jamaica has been diminished from 120 to 20 per thousand by their removal from the plains to the hills; and it is well ascertained that ague, dysentery and fever prevail in localities where the surface of the ground is naturally wet and insufficiently drained, or where there exists an accumulation of decaying matter, of which one sure indication is the presence of an abundance of flies. Dampness of situation is also productive of mental depression and bodily feebleness, which excite a craving for intoxicating drink. The embosoming in trees, or any other obstruction to a free circulation of air immediately round a dwelling, is prejudicial to health, and should, therefore, be avoided.

A soil of gravel is unquestionably the most healthy, and, next to it, one of sand. Clay soil, which, from its non-porous nature, retains the rainfall, is a frequent cause of the dampness so prevalent in the lower stories of houses in many localities—an evil felt as much in some which are elevated as in those at a lower level, and a fruitful source of sickness amongst servants, as well as the occupants of small houses, whether in towns or in the country. The precautionary measures which should be adapted when the soil is of clay will be noticed under the head of construction. A soil of chalk is usually attended with the disadvantage of its being necessary to sink a considerable depth for water; whilst its chemical properties, imbibed in the process of filtration, are injurious to some constitutions. Tanks or reservoirs for storing rain-water are, in such cases, often the most suitable expedient.

* Read at the Royal Institute of British Architects by HENRY ROBERTS, F.S.A.

† This paper was published, with numerous illustrative plates, by the Society for Improving the Condition of the Laboring Classes in 1850, under the title of "The Dwellings of the Laboring Classes, their Arrangement and Construction;" and it has, in a French translation, made by order of the Emperor when President of the Republic, been widely circulated in France. Considerable portions of it have also been published in Germany and in the States of North America.

‡ A process for softening water derived from chalk has been put in operation at Woolwich, and is said to be successful. In an article on sanitary legislation in England in the *British Almanac* for 1859, this process is noticed, and also the serious inconvenience often occurring from the oxidation of iron pipes used for soft water supplies, the only effectual remedy for which is an internal coating, or varnish.

Loose soil close to a house is a frequent cause of damp, which might be remedied by a flagging of stone or asphalt, and in many situations a dry drain ought to be formed round the building. Care should, therefore, be bestowed in regard to the surface of the ground about a dwelling, as well as in the selection of its site.

Drainage of the Soil and Surface.—Wherever dwellings are built on naturally wet ground, it is essential to their being healthy that ample provision be made for draining the soil, as well as for ordinary surface drainage and for the carrying off of surplus fluid from the house itself. The necessity for this description of drainage is generally more manifest in the country than in towns, their gradual formation and progressive increase having been generally accompanied with surface drainage under some form or other. Good surface drainage is, however, peculiarly necessary in towns built on an uneven surface, as is the case with the metropolis, which stands on low hills in the midst of an imperfectly reclaimed swamp, partially underlaid by a stratum of peat. The lower levels on either side of the Thames, where the drainage has been most inefficient, were much more severely visited by the cholera than the higher parts of the metropolis.*

House Drainage.—The providing efficient means for house drainage, as well as a good surface drainage, is a duty which, in the case of towns, obviously devolves on the public authorities. The consequences of a past neglect of this duty have been remarkably manifested at Windsor, where the prevalence of fevers and choleraic complaints having led to an investigation, the drainage of the town was found to be very defective, and without any proper ventilation to carry off the gases which form in the sewers; whilst, on the contrary, at the Castle, a separate and perfect system of drainage having been provided, no disease existed. The case of Bedford might be cited as another instance recently before the public. House drainage, should, as far as possible, be kept without the building, although the valuable modern improvement of glazed earthenware tubes with perfect sockets has greatly diminished the risk of an evil formerly so prevalent. Especial care ought to be taken that the pipes which discharge into them are properly trapped, in order that they may not become a medium for the escape of foul air into the dwelling.

Cesspools under basement floors, so common formerly, have been the cause of sickness and deaths innumerable. During the cholera in 1849, to my knowledge, several cases wholly traceable to this cause occurred in one house. Whenever these latent sources of mischief are discovered, they should be removed as quickly as possible. In many houses of the first magnitude, both in the metropolis and in the country, which are not of recent construction, this evil exists, as well as that of defective drains, causing the ground under the house to become sodden with fetid matter. The gases which originate in these places, and diffuse themselves over the dwelling, constitute one of those conditions of local impurity which exercise a powerful influence when the state of the atmosphere is favorable to an outbreak or spread of cholera, fever, or other kindred complaints. The abolition of cesspools within all dwellings is therefore a sanitary measure of the first importance.

Pure Water.—For an ample supply of pure water, one of the most important accessories to a healthy dwelling, the public authorities should, in the case of towns, be held responsible. The contamination of our rivers by their being unscrupulously, and at the same time most wastefully, made the receptacles of sewage, has rendered them very generally incapable of supplying the neighbouring population with pure water. Fully admitting the improvement which, in respect to its supply of water, has taken place in our own metropolis, it still remains far behind the metropolis of the Roman Empire, and even many of its provincial cities. Those who have traversed the Campagna di Roma can never forget the gigantic aqueducts whose ruins proclaim how abundantly and at what cost Rome was supplied with water. The practice which has to such an extent prevailed in our towns of obtaining water from wells, sunk not unfrequently near to a churchyard, has been very prejudicial to health, though its sparkling appearance and freshness to the taste might lead to the contrary supposition. Its impurity is generally caused by an infiltration from some neighbouring drain, cesspool, or other deposit of putrefying matter. Many such instances in the metropolis might be referred to.†

For dwellings in the country good drainage and ready access to pure water are not less essential than they are in towns, and they ought, therefore, to be made the subject of deliberate investigation before the locality of a dwelling is decided on.

The aspect of dwellings is often greatly dependent on local circumstances, and has an influence on their salubrity which is too much overlooked. In preference to all others, a southern aspect should be chosen, and where that is unobtainable, one inclining either to the east or to the west, so that the rays of the sun may enter at some part of the day. Rooms to be chiefly occupied in the height of the summer are exceptional, though in such cases I should give the preference to an eastern or a north-eastern over a due northern aspect. In towns the difficulty of obtaining a sunny frontage may frequently be great, if not insurmountable, but the importance of having the sun's rays within the dwelling for some portion of the day, especially in rooms occupied by children or by invalids, should never be forgotten. I could point to a large convalescent asylum in the country which is so arranged that the spacious gallery used by the patients for exercise during the greater part of the day is without the cheering and warming rays of the sun. Such defects tend to defeat the main object of the institution, and are a discredit to all concerned in the building.

The structural features essential to a healthy dwelling have now to be considered. In pointing them out I shall aim at the same brevity which has characterised my remarks on those appertaining to locality; and not doubting that your own recollections will supply the corroborative passages which might be adduced from Vitruvius, from Alberti, and other eminent authorities, I

abstain from quoting them, in order to avoid unnecessarily encroaching on your time and patience.

To secure the healthy condition of a dwelling its structure must be—1, dry; 2, warm; 3. The number and area of its apartments must be in proportion to the number of their occupants, and due provision must be made for all the requisites appertaining to daily life. 4. It must be well lighted. 5. It must be properly ventilated, and be free from noxious vapours of every kind.

1st. In order to a house being dry, it must stand on a dry foundation; and where this is not otherwise obtainable, artificial means should be adopted, either by forming a stratum of concrete, varying in depth according to circumstances, but never less than 12 inches, by a bedding of slate in cement, or by a bed of asphalt laid through the whole thickness of the wall under the floor level.

The lowest or basement floor should be raised not less than about 8 inches above the external surface, and if the floors are of wood, the ground beneath them ought to be excavated, so as to give a clear depth of not less than 12 inches, which should be ventilated by means of air bricks, built in the external walls.

Floors of stone or of slate should either be hollow, resting on brick courses, or be laid on a dry bed, prepared for the purpose, which is also essential in the case of brick or tile floors. In some parts of the country lime and sand floors are pretty generally used for cottages, and when properly made with a dry substratum are said to last upwards of 40 years. I have used Portland cement for the floors of living rooms in fireproof dwellings, but in places where there is much wear stone is preferable. Bed-rooms ought, in our climate, when not matted or carpeted, to have boarded floors.

External walls must be weather proof, of sufficient thickness to secure dryness and warmth. On the facilities for obtaining a good and non-porous material may depend whether brick, stone, or flint be used; whichever it be, good mortar is essential to dryness. In some places concrete, pisé or cob, with an external facing of plaster, or rough cast, may be employed with advantage, provided the foundation be dry, and the roof project sufficient. Hollow walls conduce greatly to dryness and warmth; they may be formed either wholly of brick, or externally of one of the other materials before named and be lined with brick or tile, a small hollow space being left between. The same advantages are desirable from the use of hollow bricks, and they are also well adapted for the lining of walls. A glazing on the external surface of brickwork is an effectual preventive of damp, and it is to be regretted that suitably glazed bricks are not easily obtainable at a moderate price. Their smooth surface is a great recommendation for internal work, on account of its non-retaining properties.

For the covering of roofs slate has with us so many recommendations that its general adoption may be readily accounted for; the evils attendant on its use arising from changes in the temperature should be particularly guarded against by boarding, felt, or by double plastering. Tiles are generally found to be warmer in the winter and cooler in the summer than slate, and requiring less lead are in that respect more economical. Projecting eaves should invariably have gutters, to prevent the drip which is often the cause of damp in the walls and foundations; the same evil too frequently arises from a stoppage of the rain-water pipes consequent on their being either too small, or their heads being unprotected from the intrusion of birds' nests, leaves, &c.

For the roofs of town buildings more particularly, a fire-proof construction,* such as was described in my paper of 21st January, 1850, has many obvious advantages to recommend its general adoption. But the practice, so extensively prevalent, of forming rooms for servants in the roof has an opposite tendency. In reference to fire-proof constructions I would take this opportunity of recalling a suggestion in a Paper read by my friend Mr. S. Smirke, 5th November, 1860, "On the Use of Coke," which, from its lightness, appears to be equally suitable for the purpose of vaulting, as the volcanic scoria or pumice known to have been thus applied in many important buildings in Italy and Sicily.

When the immense destruction of property caused by fire, and too often accompanied by the loss of life, is considered, the question of an efficient system of fire-proof construction generally applicable, appears to me to merit the very serious consideration of the Institute of British Architects, and I, therefore, venture this passing remark, though the suggestion is not immediately connected with my subject.

Wood of an inferior quality, or unseasoned, when used in any part of a dwelling-house is a false economy, whilst the cracks and shrinkages caused thereby are often prejudicial to health.

Lead, a material which enters into the construction of most dwellings, should be used with great caution for pipes which convey drinking water, and ought to be dispensed with altogether for cisterns, excepting those for the service of closets, on account of the injurious effects produced by the chemical action which frequently takes place when the water in them is soft. Iron properly varnished or enamelled, may be substituted for both purposes; and for cisterns, slate is very suitable. The offensive and unwholesome smell which often proceeds from sinks of lead or ordinary stone, renders the substitution of either of slate, or glazed stone-ware, or of enamelled iron, very desirable.

2. Warmth.—This in a dwelling depends not only on its aspect, its dryness, the materials used, their proper application and substance, as I have already noticed, but also on the structural plan, particularly on the relative position of the doors and fireplaces, as well as of the windows and spaces for beds, which should be so contrived that the occupants will not be exposed to draughts. With all our regard for comfort it is surprising that we do not more frequently endeavour to modify the effects of our variable climate, by the use of double sashes, which are so common in many parts of the Continent. This would be a means of retaining more of the small portion of genial warmth which passes into the room from our wastefully constructed open fireplaces, a subject on which, in connexion with the artificial warming and ventilation of dwellings something more will be said hereafter.

* I have the authority of Dr. Farr for stating that, if the mean of cholera epidemic of 1848 and 1854 in London be taken, nearly 11 per 1,000 of those living under 10 feet of elevation died, to 1 per 1,000 of those at the highest elevation; and that, if London be divided into terraces of different degrees of elevation, the mortality from an epidemic of cholera is, in round numbers, inversely as the elevation.

† One was recently mentioned to me by the medical officer to the General Post Office as having been the cause of much internal derangement to several of the employees in that establishment, and which had led to his recommending the use of the patent carbon filter. In late reports of the Registrar-General reference is made to a well at Sandgate as containing 49·90 grains of impurity per gallon; and in another at Hampstead as containing 53·60 grains, whilst the water from Loch Katrine recently brought to Glasgow, at a cost of £1,500,000, contains only 2·35 grains. The water supplied to London by six of the leading companies were found lately to contain 17·84 to 21·68 grains.

* I adopted the hollow-brick fire-proof construction here referred to, in the roof and floors of the two ranges of model dwellings for families built in Streatham-street, Bloomsbury, and in Portpool-lane, as well as in the lamented Prince Consort's model houses at the Exhibition of 1851. Recently the efficacy of this mode of construction was tested at the Streatham-street houses by a tenant, who accidentally set fire to the woodwork of his apartment, to which the fire was limited. Hollow bricks, with wrought-iron girders, are now very extensively used for floors in Paris. Thirty years since, when constructing Fishmongers' Hall, I used, over the kitchen and in some other places, a vaulting of earthen pots, hollow bricks being then scarcely known, though they have been found in the remains of Roman buildings in this and other countries.

3. The number and dimensions of the apartments essential to health in a dwelling must be proportionate to the number of its occupants, and suitable provision must be made for all that appertains to a well ordered domestic life, not only that of the master and mistress as well as of the children, but also that of the servants, whose health and morals it is the duty of their employers to care for.

The amount of space required for health being greatly dependent on efficient ventilation, it will be considered under that head. In most dwellings the scale of accommodation chiefly depends on the means and circumstances of the occupants, in which the variety is so great that I shall not attempt giving anything but a brief outline of what may be termed the minimum provision which ought to be made for a family consisting of parents and children of both sexes, belonging to the laboring class, undoubtedly the most numerous section of the community. A laborer's dwelling in the country should have a small entrance lobby, a living room not less than 150 feet in area, a scullery of from 60 feet to 80 feet in area, in which there should be a stove or fireplace for use in summer, as well as a copper and sink; there should also be a small pantry. Above should be a parents' bed-room of not less than 100 feet area, and two sleeping-rooms for the children averaging from 70 to 80 feet superficial each, with a distinct and independent access. Two of the sleeping-rooms at least should have fireplaces. There ought also to be a properly lighted, ventilated, and drained closet, as well as suitable inclosed receptacles for fuel and dust. The height of the rooms, in order to their being healthy, should be scarcely less than 8 feet, and even 9 feet would be desirable but for the extra expense. With a view to ventilation, the windows should reach nearly to the ceiling, and the upper part be invariably made to open. In windows which have transoms as well as mullions, some of the upper compartments may be hung on centres for this purpose.

It may be deemed almost Utopian to indulge the hope of seeing such accommodation as this placed within reach of those of the laboring population who are doomed to reside in towns; but those who for several years have been striving to place the benefits of a healthy dwelling within their reach, whilst knowing by experience something of the numerous difficulties to be overcome, and being fully aware that, in many cases, it may be impossible to accomplish all that is desirable, ought not on that account to be daunted in the pursuit of an object of such great and wide-spread importance.

In returning from this digression to the structural features of a healthy dwelling, I would point out the great importance of direct external ventilation and light to all waterclosets, including those for servants' use. It is obvious that constructive defects here must be a very serious evil. The pipes to waterclosets should be protected from the effects of frost. I notice also that it is of much importance the chimneys should draw so that the smoke will properly ascend; when it does not, the air is greatly contaminated by its escape into the dwelling. The smoking of chimneys, if not caused, as it often is, by the want of sufficient air in the apartment, or by bad management in the first lighting or in the putting on of fuel, frequently arises from the proximity of more lofty buildings, or of trees, and too often from a defect in the construction, such as being too large to ensure a continuous upward current—an evil which may be sometimes cured by a contraction of the throat. For all ordinary chimneys, flues 9 inches square, or, which is decidedly preferable, 10 to 11 inches diameter, are quite sufficient. Kitchen chimneys are exceptional.

4. Light well diffused over all parts of a dwelling is essential to its being healthy. A dark house is not only gloomy and dispiriting, but is always unhealthy. We know on high medical authority that "the amount of diseases in light rooms as compared with dark ones is vastly less." Light ought to be diffused over the whole dwelling, so that no dark corners be left to invite a deposit of that which is untidy or offensive. Happily the motive which in times past led so much to an exclusion of the light of heaven no longer exists, and though ages may pass ere the evils resulting from a vicious legislation are entirely swept away, yet the removal of the tax on windows and of that on glass must, amidst much to discourage those who have long and zealously labored in the cause of sanitary amelioration, be regarded as most valuable concessions in its favor.

5. Ventilation and Artificial Warming.—These are questions of vital importance in regard to dwellings, though, judging from the neglectful indifference of multitudes, their value is far from being duly appreciated by the educated, and even by some in the scientific classes of the community. Were it otherwise, the closeness perceptible on entering many of their dwellings, the oppressive heat of the rooms, the sickening fustiness in the apartments occupied by the servants, and too often in those of the children, would certainly not exist. When the numbers of hours passed within doors by every human being in a civilised state is considered, it will be manifest that the breathing of vitiated air for so large a portion of the twenty-four hours must be as injurious as living on unwholesome food.†

T-SQUARES.—At a recent meeting of the Franklin Institute, U.S., Mr. Nystrom showed several specimens of improved T-squares. He said, simple as this instrument seems to be, it is difficult to procure one that will satisfactorily answer the purpose for which it is intended. The rule of the square is generally made of hard wood, which is apt to warp, and it is heavy and clumsy to handle on the drawing board. The most suitable wood for a T-square is *spruce-fir*. This wood is not affected by a change of weather, and therefore will not warp; it is among the lightest of woods, its specific gravity, when well dried, ranging between 0.4 and 0.5, but it is too soft to be used against the drawing pen, in consequence of which it is necessary to line the edges of the rule with a harder wood. It is of great importance with what kind of hard wood the spruce-fir rule is lined. Most of the hardest woods are not suitable for the purpose, as they warp and twist the rule, and in some cases will separate from it. Maple is found to be the best for the purpose; it is a fine grained, hard wood, and its specific gravity, when well dried, is only 0.6; its behaviour in changes of weather coincides very much with that of spruce-fir, and it is therefore best adapted for this purpose. —*Mechanics' Magazine*.

* The late Mr. Thomas Cubitt told me that he had frequently cured smoky chimneys, in houses of his own building, well known to be amongst the best in London, by an imperceptible admission of a little air over the room doors, the woodwork fitting so closely that sufficient air could not, when they were closed, gain admission to the room.

† To be continued.

THE HOUSE OF NASSAU, AND FOUNTAIN, NUREMBERG.

THE irregular streets and squares of Nuremberg, have a wonderfully quaint, picturesque, and ornate character, and the traveller wandering through them, may easily imagine himself transported back a few hundred years into the past, such an air of antiquity pervades the city.

Many of the dwelling-houses are still inhabited by the families whose ancestors originally built them. As a rule, they are of narrow frontage, with acutely pointed gables, the roofs garnished with an abundance of dormer windows. Though narrow, the houses often extend back from one street to another, enclosing two or three courts. The ground-stories were low and vaulted, and usually occupied as warehouses, the upper and domestic portions were elaborately carved and stuccoed.

Das Nassauer Haus—the House of Nassau (of which we give an engraving on another page), stands nearly opposite the church of St. Lawrence; it is considered one of the best examples of the domestic architecture of the city. The style is true German Gothic, it was built at the beginning of the fourteenth century in the reign of the Emperor Charles IV. The angle turrets are very marked features, and together with the high-pitched roof, and battlemented and richly panelled top, form an artistic termination to the somewhat tower-like building. The centre oriel window is very beautiful in design and execution. The little drinking fountain below is of modern date; it is decorated with a statuette of the Emperor Adolphus of Nassau, at whose desire, the Church of St. Lawrence was built. The fountain in front of the house is rich in sculpture and metal-work.

Nuremberg has been regarded as the cradle of the arts, but many other things were nurtured in the Imperial city, which have exercised a vast influence on mankind. Cannon are said to have been first cast in Nuremberg in 1356. Playing cards (perhaps invented there), were certainly manufactured in the city as early as 1380. The first watches, called "Nuremberg Eggs" from the shape, were made there by Peter Hele, in 1517. The first gunlock in 1517. In 1390 a paper mill was built, the first in Germany. In 1550, Erasmus Ebner found out the alloy of metals now called brass; the clarinet was invented by Denner in 1690. We might easily enlarge the list: a wonderful city was and still is Nuremberg.

ARCHÆOLOGICAL INSTITUTE.

At the meeting held January 10, W. TITE, Esq., M.P., V.P., in the chair, Mr. PETRIE communicated drawings and a notice of remains of a church of circular form, called the Girth House, existing in Orkney, near the ruins of the palace of Jarl Paul, who resided there in the twelfth century. As an example of this peculiar type, of which so many are to be found in the northern parts of Europe, this little church is believed to be unique in North Britain. In general plan it precisely resembles the little church at Altenfurt, near Nuremberg. It is remarkable that no church of this form exists in Ireland.

Professor DONALDSON then made some remarks on this curious class of ecclesiastical structures, and the examples in our own country, all of which belong to the twelfth century; and Mr. TITE invited attention to the Round Church at Northampton, which he had lately visited: it had suffered much from neglect and decay, and is now in course of restoration, under the care of Mr. Scott.

A memoir was read, addressed by one of the Foreign Correspondents of the Institute, Count Tyszkiewicz, a learned Associate of the Society of Antiquaries of Wilna, and illustrative of various primeval antiquities—entrenchments, tumuli, &c.—in Lithuania. Of these a series of careful plans were sent for comparison with those of similar remains in Britain. After some general observations of considerable interest in regard to the archæology of his country, the Count explained the divisions under which the ancient vestiges may be classified: namely, the singular earthworks at the confluence of rivers; entrenched sites on the summits of mountains, sacred, as supposed, to the worship of the gods, and where small circular cavities occur constantly, in which ashes and charred wood are found, the traces, it is believed, of sacrifices; the third class includes mounds and earthworks, believed to have been destined for holding councils or for judicial proceedings; and, lastly, were described the tumuli, called Kurhany; some of them being nests of observation, like watch-towers; others following the lines of ancient roads, whilst the greater number are sepulchral, and in these are found weapons and relics of stone, bronze, and other metals, analogous to those by which the vestiges of the earlier periods are characterised in England and other parts of Europe. Beads of colored glass and of amber are likewise found in abundance.

A discourse was then delivered by Mr. E. LLOYD, of Ramsgate, controverting the opinions of the Astronomer Royal, and of Mr. Lewin, relative to the spot where Cesar landed in Britain. Mr. Lloyd was disposed to regard Shoultan, to the west of Deal, as the precise spot; and he contended that at the time when Cesar approached the British coast the flood-tide carried him strongly to the northward. He proceeded to point out, from his local knowledge, the great physical changes which had taken place in that part of the coast between Deal and Ramsgate, and especially in regard to the estuary formerly existing between Sandwich and Reculver in the direction now indicated only by the course of the Stour; he declared his belief that these results had been chiefly produced by the deepening of the channel in the Straits of Dover.

A notice was then read of the Brecken-stone, the remains of a Roman pharos on the Western Heights, at Dover, and of which was exposed to view last summer in the course of forming barracks, a photograph was exhibited. The shapeless mass of masonry, known formerly as the Devil's Drop, is mentioned by Lambard and other writers on Kentish Antiquities; it probably marked the site of a Roman pharos, on the west side of the harbor at the mouth of the Dover. The lords warden were in olden times sworn into office on this Brecken-stone, which had been covered up with chalk and rubbish, and concealed from view in 1806, to be again exposed for a few days during the recent operations, and again wholly lost and forgotten.

Leeds.—New Chapel.—The Baptist denomination of Leeds have just opened a new chapel. The building, erected under the superintendence of Mr. T. Ambler, architect, of Leeds, is in the Italian style. The walls are being carried up to the floor with pitched face wall stones, finished with a stone string, from which commence pressed brick walls. Each side is divided into four bays, having windows with circular heads, glazed with ground glass. The chapel is arranged with baptistery and communion pew, and will seat 375 persons. The seats are all open, with octagon ends. Part of the roof is seen, with curved braces resting upon moulded stone corbels, the plaster work being carried partly up the slope of the roof. The woodwork is stained and varnished. There are two vestries in the rear of the chapel, and room for heating apparatus, and also a small yard with conveniences. The chapel is lighted by two sunlights near the ceiling. The total cost of the building has been over £800.

LIVERPOOL ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY.

AT the seventh meeting of the session, held at the Royal Institution, Mr. J. M. HAY, the President, who occupied the chair, alluded in feeling terms to the decease of the Prince Consort, which had thrown a nation into mourning, and cast a gloom over every household in her Majesty's dominions; and that, while the sympathy for our widowed Queen was as heart-felt as it was universal, they, as architects and lovers of the arts, had especially to regret the death of his Royal Highness, from the recollection of what he had done to promote the interests of art, and extend its influence among the people.

Amongst the donations presented was one from Messrs. W. and G. A. Audsley, architects, being a copy of the "Sermon on the Mount."

The PRESIDENT passed some eulogistic remarks upon Messrs. Audsley's donation, and a vote of thanks was passed to those gentlemen by the Society.

Mr. SAMUEL HUGGINS then read a paper on

THE WALLS AND ROWS OF CHESTER.

After some introductory observations, Mr. Huggins remarked that Chester was a gem of cities, and a gem beautifully set. Its natural site alone, for its native attractions, was worthy of a high degree of admiration. The most important, though not the most unique, feature of the city, that which contributed most to its beauty and enabled you the better to behold and appreciate all others, was the Walls, which, though the work of man, were as vital as the rock on which they were built; as much recognised by nature as the trees which clung to or cast their shadow on them. The walls were said to have been originally built by the Romans, and there was a Roman grandeur in their conception which greatly favored the supposition. They presented in many parts a most imposing aspect to the surrounding localities, and gave a grandeur to the outskirts of the city which few masonic constructions could have secured. Though no longer needful for defence, they were anything but useless. There was scarcely a more delightful promenade in England. A walk round the walls of Chester was like a dream, for the strange variety and mixture of objects of every kind and style and form, and of every date, from the ephemeral erection of yesterday to the historic fane of ten centuries ago, that passed in array before you. Here you were greeted by the harsh utilitarian genius of the age—there you communed with the hoar spirit of antiquity: on this side were embodiments of the present; on that, mementoes of the past, in gazing upon which you were looking back into time as well as out upon space. One moment you encountered an object of poetic beauty, the next presented you with something of utilitarian homeliness. On one side you might step out on to the green turf, on the other you were in a region some hundred feet above it, high over roofs, and chimneys, and tree-tops. Mr. Huggins entered into a particular and critical review of the cathedral as the most important object of art. St. John's Church, which was visible from many points, he warmly eulogised as a fine specimen of Norman and pointed Gothic. The ancient choir and Lady chapel at the east end, now abandoned as a ruin, was, even in its present state, one of the most graceful objects anywhere to be met with, and went to prove that the works of the architect into which the vital spark of beauty had been once breathed will long retain the impress of its spirit, and, like the fairest works of the Creator, be beautiful even in dissolution. He regretted that, in the important restorations now going on, faithfulness in adhering to the original should have gone to the extent of restoring its defects, as regarded the present destination of the edifice as Protestant church; and that the opportunity should have been neglected of so far modifying the plan as to remedy the great deficiency of light, which could easily have been done by piercing a few of the blind arcades of the clerestory, which would not in the least have interfered with the style. Could the original architects, who belonged to a fraternity remarkable for nothing more than their strict attention to utilitarian requirements in their works, be brought from their graves, they would smile at our solicitude to preserve what they would at any moment have sacrificed to fitness—especially if made aware of the great intervening event which we call the Reformation. He noticed a variety of other objects and scenes which the walls commanded, and concluded his remarks upon the latter by observing that they were by no means an obsolete feature. Nothing could be more suggestive to the projector of a new town, or improver and beautifier of an old one, than the walls of Chester. A characteristic of Chester that deserved particular notice in any account of its architecture was that, owing to the apparent contentedness of the wealthy to dwell among their poorer fellow-citizens, it contained houses of all classes, from the highest to the lowest, all mixed up together in the most easy and natural manner imaginable. This, he considered, was one great source of the picturesqueness of the place, and remarked that there was something in it pleasing to the moral sense as well as to the sense of beauty. It gave, he thought, a sort of perfection to a neighbourhood when it was inhabited by a variety of classes that enabled an individual, whatever his rank in life, who felt as he ought to feel, more at home, more embosomed in human society, than when he was among his own class only, isolated from all others. He entered into a critical notice of the Rows, which, unique as they were, and strangely unproductive as they had been of any modern progeny, were, in their corrected, idealised form, as applicable in the present day to the streets of London, Liverpool, or Manchester as they ever were in Chester, and where their introduction would relieve architects from the necessity under which they at present lay, through the requirements of shopkeepers, of producing ugliness in their shop designs. Chester, though eminent for the beautiful, was somewhat behind in the useful. It was wanting in sanitary regulations. In some localities it was too densely built upon, and contained houses deficient of light and air. It had a handsome railway station, but that was not connected with the city by a proper thoroughfare. There was a deficiency of bridges connecting the two sides of the river. There was a gate wanting to connect the walls across Grosvenor-street. He remarked upon the character and position of the various public buildings, and expressed his surprise at the meanness of the building devoted to the post-office, a public department which, from its importance, might be expected to be located in one of the finest edifices in the city.

THE HORTICULTURAL SOCIETY AND THE INTERNATIONAL EXHIBITION.—Her Majesty's Commissioners and the Council of the Royal Horticultural Society have entered into arrangements, by which it is agreed that the price of a season ticket of free admission to both the Horticultural Gardens and the Exhibition, shall be five guineas.

INSTITUTION OF ENGINEERS IN SCOTLAND.

AT the second meeting of the session seven new members and one associate were proposed and fifteen gentlemen were elected members of this Institution.

Mr. A. ALLAN then read papers on an Improved Duplex Spring Buller and Draw Springs for Railway Plant, and on Improved Roof Lamps for Railway Carriages, after a discussion on these papers,

Mr. E. HUNT gave a description of a German veneer-cutting machine, in which a straight saw blade is used, being stretched in a frame of the ordinary construction, consisting of a style with cross-heads at each end and a back tension rod, and the frame is made to reciprocate by a crank and connecting rod, the crank shaft being carried upon a separate block, situated to one side. The saw frame is peculiarly guided; each of its cross heads has attached to its under side two small swivelling sliders. These project horizontally in opposite directions into small square grooves, formed in the inside vertical faces of the guides, which are bolted down to a cast iron plate, fixed along the front of the bench. The guiding grooves are not straight, but curved slightly upwards from their inner ends towards the opposite outer ends, and by this ingenious contrivance a twofold advantage is obtained. The saw is made to do an equal amount of work in both directions of its motion, whilst the upward feed of the log is continuous, and the saw cuts inwards towards the centre from both edges of the log, and has in consequence much less tendency to break through the veneer near the edges when the wood is brittle. Another important feature of the saw-frame guides, is the provision for lubricating them. Lubrication by hand or by ordinary appliances must be somewhat in excess to insure efficiency; and as a consequence, the oil is thrown about by the rapid motion and injures the veneers. In this machine the lubricating oil is put into small brass cylinders or pumps, one for each guide, and communicating with about the middle of it by a small tube. Each cylinder or pump, is provided with a piston which is gradually screwed down by a movement derived from the feed motion of the machine, and this feeding action of course only takes effect whilst the saw-frame is in motion. The supply of oil is by these means accurately adjusted to the requirements, and there is no waste, nor is any thrown about. The saw blade is placed vertically with its teeth directed downwards. It will be understood that the teeth are shaped to act similarly in both directions; in side view they resemble lancet points projecting at short intervals from a straight edge; they are very slightly set, alternately to opposite sides.

Instead of the guiding surface upon which the saw blade runs being straight, a slight convexity inwards is imparted to it. It is practically impossible to stretch a thin steel band so tightly that it will not buckle or bend out of the straight line when subjected to varying strains. A very little lateral strain will make it move slightly out of the straight line; but if it is by any means kept slightly out of that line, it will require a much larger proportionate strain to make it recede still further from it. Thus the saw blade being already stretched over a curved surface, cannot be made to spring from that surface with anything like the ease with which it would spring from a flat surface, being equally stretched in both cases. In a knife 33 inches long, the convexity is about $\frac{5}{16}$ ths of an inch, the length of the saw-blade being 6 feet; but the amount of convexity is varied in different cases.

These various contrivances permit of a very thin saw-blade being used, and as the saw removes from between each veneer, and wastes, a thickness of wood at least equal to its own thickness, a reduction in the thickness of the saw-blade involves a direct diminution of the waste. Specimens of the veneers cut by these machines were exhibited. It is common for them to obtain from 14 to 20 veneers of a moderate thickness from the inch of wood, but as many as 36 can be got from the inch if required; the veneer is, however, in this last case rather too thin for satisfactory use. To show how refinement in one part of a machine leads to, and in fact necessitates an equal refinement in other parts, it may be mentioned, that the full advantages of these machines cannot be realised with the saw blades in the state in which they are received from the makers. In appearance the blades are well made and finished, and the surface seems smooth and the thickness uniform. It is, however, found to be absolutely necessary to pass them through a special machine, whereby their surfaces and thickness are by a planing process rendered sufficiently true and uniform. In the case of resinous woods, the heat caused by the sawing action is apt to soften the resinous matter, and very much increase the frictional resistance to the saw-blade. To overcome or lessen this difficulty when it occurs, a lubricant is applied to the saw-blade, and the one found most suitable is a solution of salts of lemon or oxalic acid.

During the discussion which followed, the author remarked, that it was not intended in the paper to raise the question of novelty respecting any part. The machine had simply been selected for description as one which contained all the most recent improvements. The paper was designed to be the first of a series on wood-working machinery, and was a description of the best—as far as he was aware—of that class of veneer-cutting machines. The Institution would undoubtedly be gratified by receiving a description of a good circular-saw veneer machine. It was intended, if those who had it in their power would give their assistance, to publish in the Transactions descriptions of the best machines now in use for the various operations of working wood; and there was no doubt it would form a very interesting series, and that it would be very valuable for reference.

MANCHESTER LITERARY AND PHILOSOPHICAL SOCIETY.

AT an ordinary meeting held December 24, J. P. JOULE, LL.D., President, in the Chair,

Mr. BROCBANK exhibited some samples of steel manufactured by Mr. Bessemer's process. These specimens had been bent and twisted cold, and showed a remarkable degree of ductility. He stated that the Bessemer steel was one of the most plastic and manageable of metals, more so even than copper. It could be bent, flanged, or twisted, either hot or cold, without annealing, and over a considerable range of temperature—which is not the case with ordinary steel or copper. A plate of 18 inches diameter had been forced through a series of dies until it formed a tube 13 feet long and $1\frac{1}{2}$ inch diameter, without any crack or flaw. A ring of metal could, at one heat, be hammered into a die to form a locomotive engine chimney-top. In drilling a circular hole into a plate continuous shavings are formed, whereas, in copper or Low Moor plates, or any other metal, the shavings break into pieces $\frac{1}{16}$ in. long. Thin sheets of the Bessemer soft steel can be bent backwards and forwards hundreds of times without a fracture, and are almost as flexible as paper.

INSTITUTION OF CIVIL ENGINEERS.

ON Tuesday, January 14th, JOHN HAWKSHAW, Esq., F.R.S., President, in the Chair. Mr. Hawkshaw delivered his inaugural address, in which he adverted to the wide range of subjects embraced by the profession of a civil engineer, and observed that in no pursuit was progress more apparent than in it. Thus, within the last thirty years, about 70,000 miles of railway had been made in different countries, at an outlay of eleven hundred millions of pounds sterling, fully one-half of which expenditure had been under the direction of British engineers. Again, in 1815, the swiftest Atlantic packets depended wholly on sails, and the voyage occupied twenty days, whereas now the journey was performed by steamers in nine days. Ten years ago the steamboats plying between Holyhead and Dublin, then as now, among the fastest afloat, had attained a speed of seventeen miles an hour, whilst last year the new boats reached a speed on their trial trips of twenty and a half miles an hour.

Since 1848 the speed of Her Majesty's screw line-of-battle ships had been doubled. During the same period the build and construction of steamboats had been greatly improved, and the doubts which prevailed until very lately whether iron was the best material for line-of-battle ships seemed now nearly dispelled, although the rapidity with which iron fouled would, unless some remedy could be devised, always be a source of trouble. The precise and the best mode of constructing iron ships of war was next considered, and it was urged that, by the adoption of an improved system, the whole of the iron used in their structure might be made to add to the strength of a ship, as well as be useful for its defence, which was not the case at present. With regard to speed, it was with steamers, as with locomotive engines, a question rather of what velocity we could afford to pay for than of what rapidity could be physically attained, for there was no doubt the speed of either could be accelerated beyond any point the nation could at present afford. With respect to railways there was an anomaly which before long would require attention. Thus, to make way for passenger trains, goods and mineral trains were in many cases hurried on, manifestly to the prevention of due economy.

In grouping engineering works the electric telegraph might be classed with railways and with steam navigation. All were agents of intercommunication, tending to the same important ends; but, of the three, the electric telegraph was, by the peculiarity of its operation, the most wonderful. Since 1839, when the first public telegraph was established, about 14,500 miles of telegraph had been opened in this country; 100,000 miles in the rest of Europe; upwards of 48,000 miles in the American States; and the total extent of telegraph at this moment could not be less than 200,000 miles. On land this most useful discovery had been uniformly successful. Like railways, it had grown—in Great Britain by public support alone—into an "institution." Ocean telegraphy had been less fortunate in its results.

Simultaneously with the rapid advance of these works there had been great progress in another branch of engineering—gunnery, with which civil engineers had latterly become connected. Within the last few years the range of artillery had been doubled, the weight of the gun in proportion to that of the projectile had been reduced one-half, and the capacity for power of the elongated, as compared with the round shell, had been more than doubled. This great advance in the destructive power of cannon had rendered most of the old fortifications useless. As ships were being clothed in iron mail, so it seemed probable that iron would be largely used in modern fortifications, and for embasements that material offered great advantages. Forts might, in some cases, be built principally, if not wholly, of iron; and Mr. Hawkshaw hoped it would be adopted for the superstructure of the large sea forts at Spithead, the construction of the foundations for which had been entrusted to him.

Having noticed some of the advantages that might result from a greatly improved quality of iron, or a cheap manufacture of steel, or of a metal approaching steel in character, including the possibility of increasing the size and power of cannon, of constructing bridges of greater span, and of reducing the at present, unwieldy size of paddle and screw shafts, crank axles, and other portions of all sorts of machinery—attention was called to the great facilities afforded by the use of iron cylinders, in sinking and securing foundations.

There was one other subject connected with mechanics, which had hitherto been barren of result—the discovery of a new motive power—for the steam engine remained the only tame giant that was usefully subject to the will of man. So long as motive power was to be obtained through the intervention of heat, or until a cheaper fuel than coal could be found, it seemed improbable that the steam-engine would be superseded by any other machine, though it would not be safe to predict that considerable improvements might not be made in the steam-engine, or in engines to be worked by coal.

In conclusion, the President observed that engineers might feel, when laboring on public works for facilitating the intercourse of nations, that they were not merely conquering physical difficulties, but were also aiding in a great moral and social work, for it was distance and separation that led to misapprehension and prejudice, to ignorance and mistrust, to rebellion and war.

At the monthly ballot, the following candidates were balloted for and duly elected:—Messrs. A. L. Light, J. R. Mosse, and J. C. Smith, as members; the Lord Richard Grosvenor, M.P., and Messrs. H. A. Hunt, Jnr., and H. H. Keeling, as Associates.

THE LATE M. C. WYATT, SCULPTOR.

WE have to record the recent death (at the age of 84 years) of Mr. Matthew Cotes Wyatt, whose name was well known nearly half a century ago as one of the foremost sculptors of the day. The late Mr. Wyatt was the son of James Wyatt, Surveyor-General under King George III., who lies buried in Westminster Abbey. He was born in 1777, and was educated at Eton, where he was the contemporary of the late Marquises of Londonderry and Anglesey, and of Lord Stuart de Rothesay. At the age of nineteen he was employed, under the immediate patronage of King George III., in the execution of several works of art at Windsor Castle; but his first public work was the memorial erected at Liverpool in honor of Lord Nelson, from his design. Mr. Wyatt also executed the cenotaph in St. George's Chapel, Windsor, to the memory of her Royal Highness the Princess Charlotte. He executed equestrian statues, including those of the Duke of York, Field-Marshal the Marquis of Anglesey, and lastly, the Duke of Wellington. Mr. Wyatt also executed the monumental group erected to the memory of the late Duchess of Rutland in the family mausoleum near Belvoir Castle. But, perhaps, in no single subject did Mr. Wyatt ever succeed more thoroughly than in his statue of "Bashaw," the favorite Newfoundland dog of the late Earl of Dudley.

Another of Mr. Wyatt's most celebrated statues is that of a charger encountering the dragon, which was commissioned by King George IV., for a group of the patron saint of the Order of the Garter, and was placed by his Majesty's command in St. George's Hall, at Windsor. The horse for the equestrian statue of King George III., at the east end of Pall-mall, was also designed and executed by Mr. Wyatt, whose life had been so prolonged that he had seen a race of artists of the Victorian era arise, to claim their share of the popular fame in which he had himself participated so largely under "the Georges."

MR. SMIRKE'S LECTURES ON ARCHITECTURE AT THE ROYAL ACADEMY.—I.*

SUCH, however, as I have remarked, was most certainly not the opinion of the practice of the sculptors of the seventeenth century. M. Angelo had, in the palmy days of art, made his Moses look like no common piece of humanity, but rather like a sculptured fragment of rock, in solemn repose and instinct with supernatural dignity, whilst the Patriarch, when treated in the naturalistic school of the degenerate period I now refer to, never failed to be represented as a remarkably active impetuous old man, admirable chiefly for the violent development of his muscles; throwing himself into very unseemly attitudes, and striking the rock with his rod more like an excavator than a patriarch. Such also is the general character of their architectural sculpture.

The Apostles and Fathers of the Church were men upon whom we should be taught to look with reverence by the quiet dignity of their mien, and by that deep intellectual abstraction which is best represented by a steady composure of manner and general absence of energetic action. But where are we to seek for such examples of architectural sculpture from the chisels of the eminent masters of the fantastic school of this period? On the contrary, the Holy Fathers are made to look like posture-masters performing for the public diversion, and are seen on their pedestals, throwing their limbs about and ruffling their drapery in a way utterly subversive of that personal dignity, which, as I have remarked, seems to appertain to their character.

It is not to be wondered at that when taste in sculpture had reached this bathos our own art should have been dragged down with it to the same level. Indeed, there is, I think, good reason to apprehend that far too intimate a union had unhappily subsisted between those two sister arts.

So long as a fine taste and a high æsthetic feeling prevailed no danger came, nor could come, from the cultivation of both these arts by one mind; indeed it was the glory of our art to be intimately allied to the sister arts. But when that truth of feeling and nicety of judgment had passed away which taught those who practised both arts to discriminate well between the special requirements of each, a fusion was the result mischievous to both, but which was more particularly injurious to our art, for a sculpturesque treatment of architecture is likely to lead to far graver errors than an architectural treatment of sculpture. The latter may be liable to become cold, rigid, formal, and even unnatural; but the former is sure to become, as indeed it did become, insufferably lax and vicious, violating all the proprieties of our staid and sober art—an art which can never indulge in capricious without great risk to character and certain loss of dignity.

To say the truth, without however meaning the slightest disparagement of the sister art, I would express my belief that most of the errors of architecture in its decadence, may be traced to the injurious influence that sculpture exercised over our art. The habit of a sculptor's mind would naturally lead him to exercise his inventive faculties in designing and modelling out of the plastic material with which he is most familiar, forms and combinations of forms that would produce picturesque groups, and an ornamental, or at least pleasing arrangement of lines, and of chiaroscuro, and when he comes to execute his conceptions in stone or marble, he would of course seek to construct his work, if not out of a single block, at all events in as few as possible, because joints, and especially bed-joints, he is of course always anxious to avoid or conceal. All the proprieties, therefore of masonic construction—the sound bonding together, and truthful bedding of stones; the avoidance of false bearings, and all such like considerations are entirely foreign to his art, and are in fact subjects which never, or rarely, demand his study, nor even need his attention as a sculptor. Hence it is, probably, that we find that the sculptor of the seventeenth century, when he produced works of architecture, was very prone to treat his buildings, however large, rather like magnified copies of small sculptural models, than as purely architectural works; that is to say works built up on the true principles and according to the known rules of good architectural construction.

When we call to mind the practice so prevalent, and so popular, at the period of which I treat, of erecting in churches, huge architectural pageants, of a most ostentatious character, but of very slight and temporary materials and construction, as chapels ardentes, and catafalcos, when the funeral obsequies of some high ecclesiastical or political dignitary were performed, it seems not unlikely that this prevalent fashion on which, as it is well known, artists of highest eminence, were often engaged, conducted to, or at least accelerated, that degraded character of architecture which we so much deplore, and which so injuriously influenced our art in subsequent times.

Those vast architectural shams, the catafalcos, were put together by the flimsiest contrivances; there was, of course, a lavish superfluity of statuary, for it was of mere lath and plaster, and the drapery was often—I believe usually—real linen steeped in glue and whiting to give it a fictitious rigidity, and something of the superficial aspect of stonework.

By such like artifices it became easy to "body forth" for a day's ceremony, some "baseless fabric of a vision," highly picturesque and imposing perhaps, indeed, when treated by men of genius and ability, very striking and even magnificent; for, as I have said, men of the highest rank in art were not, in those days, averse to lend themselves to these ephemeral productions.

In presenting such unreal mockeries to the view, masonic proprieties were neither required nor regarded. The boldest and least fastidious practitioners would probably indulge and amuse their fancies in realising the semblance of impossible structures; and as it was just as easy and inexpensive out of the lath and plaster, or clay and stucco in which they worked, to present to the devout and admiring congregation a galaxy of clouds and glories, and to group together all the cardinal virtues, and the whole hierarchy of saints, as it was to exhibit the most gorgeous domes and the richest colonnades, it is not to be wondered at that the productions of the two arts got irretrievably intermingled and confounded, as well as corrupted.

That such a practice or fashion, prevailing among a people of strong æsthetic feeling, but of lax principles of taste (and such were the Italian people of the seventeenth century) should lead to a similar style of designing in works of a more permanent character, seems natural and almost inevitable.

First in interior architectural design we should expect to find, what in truth we do find, that altar pieces, baldachinos and monuments, became strange medleys of the two arts, although worked out, perhaps, in real marble and brass; and then the vicious tendency would necessarily spread itself to exterior architecture.

NORTH WALES LUNATIC ASYLUM.—Messrs. Lloyd, Williams, and Underwood have prepared plans for increasing the accommodation of this asylum to hold an additional 200; 100 males, and 100 females. The Commissioners of Lunacy have approved the designs, and the work will probably proceed in the spring. The kitchen of the present building having been found rather small, a new one with every modern improvement and convenience has been erected from the instructions of the same architects.

I think that it may be said with strict truth that exactly in proportion as this sculptural spirit pervaded architecture, so that art became deteriorated. It has been truly said by a high authority from this place, that painting and sculpture each excite our admiration the most when their special characters are kept most clearly defined, and when each art limits itself to the doing that which it is by its nature best qualified to do. Sculpture can very imperfectly represent distance, and should, [therefore, avoid as much as possible attempting backgrounds. Painting, on the other hand, is peculiarly competent to produce such effects, by its power to represent space and distance; and therefore, the painter who places all his figures on the same plane, does not avail himself fully of the capabilities of his art. So, also, the painter abandons one of his highest privileges when he neglects to use color, whilst the sculptor who uses color (unless he does so with infinite caution and exercises great moderation and abstinence), runs a serious risk of turning his statues into dolls.

Our own art is amenable to the same law. It is always most triumphant when it attempts to do that only which it is its special province to do. Thus then, to apply our remarks to the subject in hand, I should say with great confidence that the architect who so designs his building as to render it doubtful whether sculpture may not legitimately lay claim to the work as its own, is a traitor to his art, and despoils it of its birthright.

Many instances of such self-debasement present themselves among the works of the degenerate days of which I treat. It seems an ignoble task to hunt up for criticism and condemnation such examples of the abuse of genius; but such is the task I have imposed on myself, Italy well earned the honor of having been the garden in the soil of which were nurtured all the most beautiful productions of modern art; but it was unfortunately in that same too fertile soil, that with greatest exuberance sprang up those wild extravagances, which ultimately brought so great discredit on the arts, and on none more so, perhaps on none so much as on architecture.

I believe that it is to that fatal facility, which characterised the practice of all the three arts at this period, that we must mainly attribute their common decline. Wholly wanting in the thoughtfulness and deep feeling of Raffaele, and of some who preceded, as well as of some who immediately followed him, the painters sought for the most part, gorgeous and showy effects, at the expense of all the higher qualities of their art; so, as I have already remarked, the sculptors of this declining age designed impetuously and executed dexterously, but the sentiment of their art had evaporated, and its greatness had gone; — and so, to return to our own art, the architects of the happier, and earlier period, were enthusiastic without wild extravagance, refined without pedantry, and always knowing well when to refrain from and when to indulge in the graces of decoration; none knew more thoroughly than the later, more advanced, quattrocentists *how* and *when* to give a zest to their work by the most charming ornamentation; whilst none appear to have known better than they the value of breadth, simplicity and even of perfect plainness, when their good taste and judgment prompted an abstinence from ornamentation. But I have on former occasions dwelt sufficiently on the merits of the masters of that great period, and have already endeavored to urge on you the careful study of their works. I name them now, that you may feel more sensibly the contrast presented by the architecture of the degenerate age which followed. It is my aim to deter you from the evil examples set us by the licentious throng of the seventeenth century by holding up their errors for your reprobation and rejection. Through the ignorance of some, the contumely of others, and the loose habit of speaking common enough to most of us, the term "Italian architecture" is apt to be applied to buildings of the most diverse and opposite character. It is an instance of the same laxity of speech by which styles of the utmost contrariety, from the simple, austere, and honest architecture of the early Rhenish buildings down to the florid extravagances of Adam Kraft, have all been indiscriminately classed under the one large, unmeaning, and inappropriate term "Gothic." It is through the same thoughtless and perhaps ignorant way in which the general term "Italian" architecture has been customarily applied, that gross injustice has been done to works of the highest quality.

The vague and superficial knowledge, both of some of those who have written and of those who have spoken on our art, has too often led them to place under the same category the beautiful works of Bramante, Raffaele, and Giulio Romano with the truly barbarous architecture of Borromini, Fischers, and too many others. The Italians were, as I have already said, themselves the first corruptors of the Italian style; and among those corruptors Borromini stands out in strong relief as a prominent delinquent; for, as he was one of the most reckless practitioners, and one of the most sinful contaminators of style, so was he one of the most active and prosperous. Prosperous he truly was; for with that fatal facility on which I have been animadverting, he occupied a long course of practice in spreading over Italy a numerous and conspicuous progeny of ugliness. Prosperous, however, he was not to the end. By a kind of poetical justice which does not always attend upon the guilt of offending artists, he died miserably, the victim of jealousy and envy. Bernard Fischers was another instance whom I have adduced as one of the false lights of this vicious period. Vienna, to this day, is, in its public buildings especially, distinguished by the bad taste of Fischers, and I know no city so sadly disfigured by the school to which he belonged.

Milizia is a cantankerous critic, it is true, but he is perhaps justified when he condemns Fischers' triumphal arch at Vienna as "un capo d'opera di stravaganza." The wildest disciple of Borromini, he says, could not have invented a more capricious and irrational design.

I revert, now, to the question, what was the cause of this great and general degradation of art in Italy? It may be that the political and social condition of that country had for some time been degenerating; whilst other, more northern countries, were rising into wealth, and advancing in the political scale of Europe. Yet, it cannot be said that political preponderance will always be found on the same side of the balance as æsthetic excellence.

We might readily point, in the history of Europe, to notable instances of the contrary.

For example, I am aware of no wonderful development of artistic taste having accompanied the brilliant epoch of Frederick the Great, or the extraordinary political ascendancy of Charles the Fifth. Going back to an earlier period, we shall find that in mediæval times, when the social and political condition of Europe was very dark, and when, in the language of an old contemporary chronicler, "nobles and bishops built castles, and filled them with devilish and wicked men, and oppressed the people;" at that very period, foul, as it certainly was, with

most of the vices which disgrace Christianity, a school of art existed which has been advantageously compared by many with that of the Greeks.

It is clear, therefore, that there are more subtle influences which will, at least sometimes, operate favorably for the development of art, besides the accumulation of mere material wealth and political power.

Neither will peace, alone, of necessity, bring æsthetic excellence among other blessings in its train, as we are very apt to say, and very willing to believe, when we would paint the horrors of war.

The Greek states, for example, brought the fine arts to a climax of excellence never since fully attained, although they were for ever engaged either in warring on each other, or in preparing and defending themselves against extermination from barbarian hordes.

So the Italian states, among whom art received its second birth, were constantly plunged in internecine wars. How often were the great masters of our art called away to superintend the erection of gloomy fortifications, and ponderous, unseemly, loop-holed walls, for the protection of those very cities which they were engaged in beautifying! How often were great and glorious works of art arrested in mid progress by the incursions of neighbouring rivals, or by the threatened devastations of foreign hosts, or by the exhaustion of the public purse consequent on these deadly strifes!

These instances, which might be greatly multiplied, are sufficient to show that a stormy political atmosphere is by no means of necessity inconsistent with the existence of a highly excited state of artistic ardour.

I would not, however, for a moment be supposed to pledge myself to the paradox that war is favorable to the cultivation of art. Very far, indeed, from that is the fact. All that I would wish you to infer from the remarks which I have just been making is, that the arts have been found to prosper notwithstanding war. But there is one condition which I believe to be clearly and positively essential to the permanent well-being of the arts, and that is, public prosperity. I suppose it to be impossible to cite an instance of the general decay of the material interests of a country not being accompanied by a corresponding degradation of the fine arts in that country; whilst, on the other hand, the sound, social prosperity of a people will generally be found to be accompanied by an elevation of their standard of taste, as well as by a widely spread appreciation of the fine arts.

The proudest works of mediæval France date about the period when St. Louis, by his wise government, raised the character and consolidated the strength of his country. In England, the rule of Edward III. marks the periods of the highest point of excellence to which Mediæval art reached in our country, and precisely that warlike and heroic period was the most brilliant in the political annals of our middle ages.

I need not do more than point to the age of the Medici, in Florence, as the period most embellished by the fine arts, and as the period when the Italian Peninsula stood foremost as the most politically eminent among all civilised nations; and we have already seen, from the retrospect I have been taking of the architecture of the Italian Renaissance, that the debasement of the three sister arts was simultaneous with the decay of Italian political greatness. It is not for me to attempt to explain these coincidences. It needs a larger and far clearer view of the philosophy of history than that to which I can pretend, before I can presume to lay open the causes of these phenomena, the existence of which is all I can venture to assert.

Perhaps, too, the inquiry into those causes would hardly profit us here, for it belongs rather to the domain of the political economist, than to that of the artist. No doubt every ingenious mind must feel an interest in these general views, but they can scarcely be expected to bear us much fruit, nor to afford us practical rules of conduct in our search after æsthetic excellence, a search which should ever be uppermost in the artist's mind, be he student or professor. To trace the progress—not the occult causes—of decay in our art, has been my chief object in the few desultory remarks which I have this evening addressed to you. It is but a sorry theme, and I may be blamed, perchance, by some for having lingered so long among these ruins of a fine art, and for having sauntered so long upon the banks of that stream of polluted art which deposited its slime over so wide a portion of Europe, and during so long a period; whilst I might, with so much more pleasurable a feeling, have been leading you on to admire beauty amidst the charms of a happier age. But it is my conviction that much benefit is to be derived from the bold and unhesitating denunciation of whatever we must recognise as faulty. There are scum on stones; whether they be fashioned by the hand of a master, or rudely hewn by the chisel and mallet of a 'prentice hand. The diagnosis of disease is, in truth, best studied, not in the healthy, but in the disordered subject.

I have laid bare before you some sad cases of such disordered subjects this evening. It was, as you well know, the Spartan philosophy to deter the youthful mind from vice by exhibiting openly to the public gaze the unhappy and repulsive results of vice.

All that I ask of you is that you will note, and heedfully observe, these errors of our art, even whilst you pass them contemptuously by, and that you will study them well, for the mere purpose of propounding them as objects which neither love of novelty, nor the attractions of singular ingenuity, or of great technical skill, should ever tempt you to imitate or to repeat.

HOUSE TELEGRAPHY.—At the *soirée* given by the Professors of University College Messrs. Silver and Co. exhibited working models of a telegraph invented by Professor Wheatstone, F.R.S. The apparatus is compact and portable, and although not occupying more space than a 9-inch cube, contains all that is necessary for receiving and transmitting signals, and for producing a current of electricity effective over 150 miles of line. The signals are made by the pointing of an index to the letters of the alphabet, numbers, &c., painted on a dial in Roman characters, and are, consequently, intelligible to all. In the transmission of signals all that is necessary is to depress the key opposite the letter or figure to be transmitted, and produce the current.

EDINBURGH MASTER PAINTERS' ASSOCIATION.—This Association has, like our London Painters' Company, established the practice of giving annual prizes for the best specimens in imitation of woods, &c. A number of specimens were exhibited last week at the rooms of Messrs. Dowells and Lyon, 18, George-street. Several of these, considering that they were executed by young apprentices, were highly creditable. The committee met in the evening, when prizes were awarded to the following:—Imitation of woods—1st prize, William Shaw; 2nd prize, Thomas Quigley. Lettering, plain and shadow—1st prize, James Duffy; second prizes, Thomas Quigley, John McCabe, and George Darling.

ON THE CONSERVATION OF ANCIENT ARCHITECTURAL MONUMENTS AND REMAINS.*

NOTHING can be more delightful and instructive than this class of investigation. One sometimes finds objects of the greatest interest and unfolds designs of the greatest beauty and originality, of which not a trace was before visible. Were it not for this, the work of restoration would be almost unmitigatedly painful, from having constantly to meddle with and to replace genuine, but hopelessly decayed, work; these discoveries, however, and the beauties they unfold, afford a delightful and consolatory compensation.

How doubly distressing, then, is it to see evidences of this kind discovered, but ignored and destroyed without one hint being taken from them, as is too often the case.

After animadverting, however, upon our own misdeeds, I think I may be excused in speaking somewhat plainly as to the fearful loss of authentic work of the most precious, indeed, of the most *inestimable* value, which is going throughout the length and breadth of that country which boasts itself to have been the birthplace of Pointed architecture, and where, if that high claim can be established, it follows as a necessary consequence that every original fragment, and every authentic detail, or—more correctly speaking—the originality and the authenticity of every fragment and of every detail, should be guarded with a jealousy proportioned to their value as the most trustworthy and the most genuine illustrations of the rise and development of that wonderful style of art.

It is perfectly inexplicable to me how the very same persons can at one time bring cogent arguments to prove that their country was the nursing mother of Medieval art, and at the next should deliberately, and without necessity, take down from her noblest architectural monuments original details of the most exquisite description which imagination can picture, and which have suffered comparatively little from time, and replace them by modern copies. Yet this is the course of proceeding going on from one end of France to the other—and that not by one architect in particular, but, in a greater or less degree, by all the architects who are engaged in the restoration of the ancient monuments of France.

In that country we have to applaud the generosity of the Government in undertaking on so magnificent a scale the restoration of its ancient architectural remains. We have not, as sometimes with ourselves, to lament the employment of persons of dubious capability; for the works are generally in the hands of men of the greatest eminence and of undoubted skill and knowledge; nor have we to complain of any want of artistic power in the carrying out of the works, for in this we must acknowledge ourselves to be in many cases surpassed. What we have to lament, to deprecate, and to protest against is, that inexplicable absence of appreciation of the value of the authenticity and of the actual *bona fide* genuineness of old work, which leads them to reject without scruple or remorse the most charming original work for some mere trifling defect, and to feel perfectly satisfied with a copy which, however skilful, must be lifeless from the very fact of its being a copy, and which, even if as good as the original, must be utterly devoid of the interest and historical value which attached to it. The extent to which this feeling, and the course which results from it, extends itself is as lamentable as it is inexplicable, and absolutely threatens to replace half of the ancient monuments of the country by mere copies of them. True it is that these copies are admirable in execution, and careful and studious in their correctness; but who cares for a copy if he can get the original? or who will ever look at the details of the French cathedrals as exponents of Medieval art, when they know them to have been executed in the nineteenth century? And it is not the examples of Pointed architecture alone which are being thus tampered with but even the curious Byzantine remains in southern France and the classic monuments at Nismes. When I was preparing, some time since, a lecture for the Royal Academy on the rise of Pointed architecture, I had a great desire to see a drawing of any capitals which might exist at Périgueux, and on making inquiry of a friend, who had just been there, he said, "Oh! I could have got you one if I had known, for the old ones were lying about among the old materials." One hears a story of an American who, after looking at the new works always going on at the Coliseum, remarked, with very just irony, "It'll be a very fine building when it's finished." And I learn from our excellent secretary, Mr. Lewis, that the very same thing is going on now at the Amphitheatre at Nismes!

Even Carcassonne, so famous and so interesting as a city—almost deserted before the close of the middle ages, and consequently a wonderful genuine specimen of a Medieval city—is, as I learn from Mr. Lewis, being renewed and made into a (no doubt very learned) model of that of which it was the dilapidated original!

A visit to the Hotel Cluny affords a practical commentary upon this system of restoration by renewal. We see there capitals from the Sainte Chapelle of an exquisite subtlety of conception and sculpture—such as to bid defiance to any one who would think of transferring their spirit to a copy—and yet thrown aside and laid on the grass-plot, in all weathers, though to the casual observer almost as perfect as if new; one sees there the real angels whose counterfeit blows the trumpets of the Resurrection over the great portal of Notre Dame; one sees the central pillar of one of the same portals looking nearly as well conditioned as its modern supplanter; one sees also balusters from the parapets of the Sainte Chapelle as good as new; and many other exquisite details rejected from the restored edifices—one knows not why. The stone-ysrds near many cathedrals tell the same story. Indeed, wherever a great restoration is going on, you may see the genuine old details, often scarcely corroded by time, lying in rejected and neglected heaps hard by.

Now let me ask, in the name of good sense and good feeling, why the great learning, skill, and judgment of the (often illustrious) architect to these works is not rather directed to the conservation *in situ* of every fragment of the noble architecture which they understand so thoroughly, rather than to its supplantment to make way for mere copies which, however admirable, possess no real value as genuine exponents of the style? If they would take the contrary course, I can aver without fear of contradiction, from the talent and learning they display, that their works would be worthy objects of the pride of their own countrymen and of the gratitude and admiration of every lover of Medieval art, instead of being, as now, causes of regret and disappointment to all. But, it may be asked, what business is this of ours? Why do we not correct our own errors, and leave architects of other countries to do as they like? I reply, that the French architects and art-historians, by showing (whether we fully admit it or no) that theirs is the mother-country of Gothic architecture, have thereby made its

productions the property of Europe and of the world; and that, on their own showing, all lovers of Gothic architecture have an almost equal claim upon them for their authenticity and their conservation.

I have dwelt so long upon the principal heads of my subject that I must but slightly touch upon that which remains: I mean the preservation of the miscellaneous remnants of antiquity, which form my third class.

These are, more than any other, subjected to the constant inroads of Vandalism. Even the reverend conservators of our cathedrals care little for the fragmentary remains by which they are surrounded, and often rather wonder at the weakness of those who lift up their voices in their favor. The very same man who takes an enlightened interest in the preservation of every portion of the church cannot be brought to care about the equally interesting though simpler structures, whose vestiges are intermingled with their own residuary houses, and would have no scruple in destroying the most interesting antiquities to provide for some passing matter of convenience.

At Worcester it is only a few months since the ancient Guestern Hall was threatened with destruction. At Ely the huge Abbeys Barn was destroyed only a few years back, and nearly everywhere the same spirit may be found to be at work. It is the duty of an Institute like this to protest against it, as they have lately to their honor done in several kindred cases.

One can hardly expect better things of a town council, when chapters of cathedrals set the example; but one must, in passing, protest against the deliberate barbarism which has within a few years destroyed the curious old town-halls of Hereford and Leominster.

Our country villages, and the country itself, are full of small fragments of ancient architecture, often not of very early date, but of most valuable character, and which are every day threatened by the hand of innovation. I refer not only to works of high antiquity, but to timber houses, old brick (or other) chimneys, shafts, old gable-houses of stone or brick, and a thousand other fragments of old buildings, which add so much to the character of our villages, &c., and are also so suggestive for rural architecture. These ought to be jealously preserved and watched by those who have it in their power to do so. Village and churchyard crosses, the remains of old domestic architecture in our towns and cities, old manor-houses, hospitals, schools, colleges, &c., &c., and a thousand other classes of building, demand equal care; and, last of all, I would mention old bridges, which are far more numerous than one would suppose, and which are less seen than most classes of antiquities, from the fact that we pass over, and, therefore, cannot get a view of them. These have very frequently been preserved intact on one side, and widened on the other; a process one cannot object to, as the roadway which they provide is usually too narrow for our present uses. Though not great engineering works, they have a noble character, and occasionally attain to considerable span; as in the case of one at Durham, which approaches 100 feet. Amusingly enough, a modern engineer, in widening it by an arch of the same span has failed in making his work stand so well as the old one.

I have, however, made my paper far too long, and must sum up briefly, as follows:—

I. Our old architectural monuments are of the utmost value and interest to us as Englishmen and as architects, and their conservation is a matter of vital importance.

II. What with neglect, Vandalism, natural decay, and ill-judged restorations, the existence, integrity, or authenticity of these invaluable remains is threatened from all sides, and fearful inroads upon them are every year being made.

And finally, it is the paramount duty of an institution such as ours—the only one of a permanent character by which architecture is represented—to take the initiative in laying down, in conjunction with other architectural and antiquarian societies, a code of rules for the treatment of buildings requiring restoration, and to take such measures as their united wisdom may suggest to promote the true, faithful, and authentic conservation of these monuments and remains.

In conclusion, then, I beg to propose that a standing committee be appointed for this purpose, and that they be empowered to act in conjunction with, and to communicate with other societies, with a view to secure their co-operation in carrying out this most important object.

COMPETITION FOR THE NEW HOUSES OF PARLIAMENT AT SYDNEY.

WE learn that the designs for the new Houses of Parliament at Sydney, and of which twenty-one were sent in, have at last passed under the examination of the Board of Commissioners, and that for two of them premiums have been awarded. On the 9th of November the Commissioners met, and were unanimous in their adjudication. The first premium of £600 was given for the design, "I bide," and the second of £300, to "Hora e Sempre," the first is by Mr. William Henry Lynn, of Sackville-street, Dublin. It is in the Gothic style, its most prominent feature being a succession of lofty towers, including a campanile; the high pitched roof and windows being highly ornamented. The chief merit of the design is said to consist in the relief afforded by the broken outline, rich effects being produced by frequent and ornamented projections. The cost of carrying this design into effect is estimated by the colonial architect at £642,205.

The architects who obtained the second premium, are Messrs. Stent and Laver, of Great Portland-street, Portland-place. They sent two designs, the one Classic and the other Gothic. The Classic design presents a row of Corinthian columns, with massive entablature and pediment, and crowned by an octagonal tower. In the Gothic design there is a central tower.

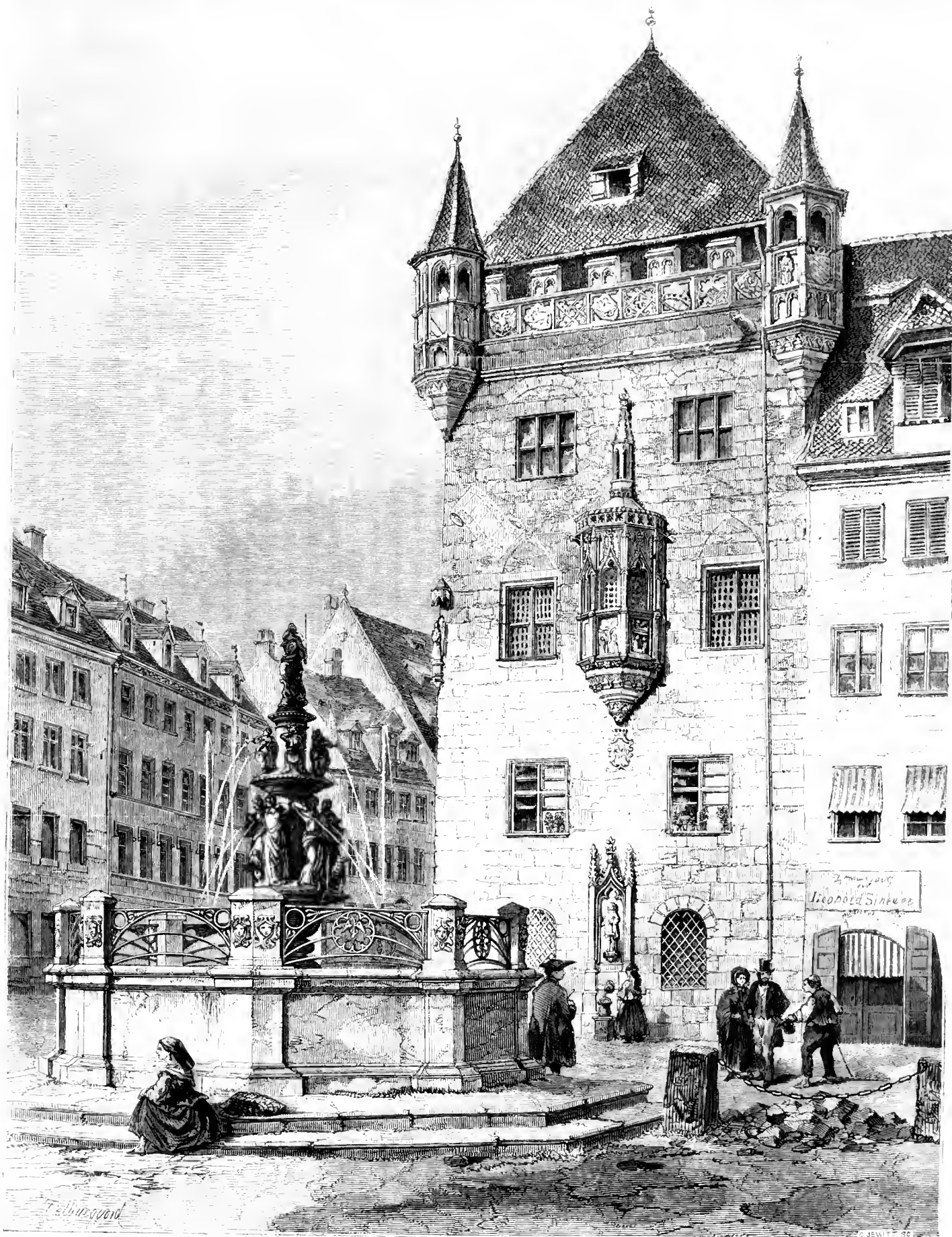
In considering their award in this case, the Commissioners regarded both designs favorably, but actually gave it for the last named. The estimated cost of carrying out the Classic design is £650,641, that for the Gothic £505,113.

Messrs. Stent and Lavers are the architects for the Parliament buildings now being erected at Ottawa, Canada West, the foundation stone of which was laid, it will be remembered, by the Prince of Wales, in August of last year. Five only of the competitive designs were the production of colonial architects.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post* Gold watches 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enables persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

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* Concluded from page 44.



NASSAUER HAUS, NUREMBERG.

ON PUBLIC MEMORIALS.

BY no works is the state of art in a country more judged of by foreigners visiting our metropolises, than by the last new statue, column, cross, or any other form of memorial set up in our streets. No work of art is more sure to be sought out and visited by strangers and foreigners than is the memorial, of whatever kind, that has been recently erected as a testimony of the respect and gratitude of the nation, to a great and good man, known not only in this country, but all over the Continent, or, perhaps, throughout the world. Everyone that has heard of him (and, perhaps, many have much admired his character, and taken a daily interest in his actions while he was living), is sure to be anxious to see what sort of memorial has been reared in honor of him.

Is it worthy of the man to whom it is erected? Is it worthy of the age which he helped to enlighten and improve? Is it calculated to keep in the minds of those who see it his character, circumstances, and history? If to celebrate an event, and not an individual, does it do so worthily and distinctively? Does it, in fine, as much as possible fulfil in every variety and particular the objects that such a memorial ought to and might fulfil. Such questions, varied as the individuals who gaze at them, but mostly to such end and purpose, either pass silently through the minds, or are given audible expression to by the different classes of spectators; and, according to the answers given to them by the memorials themselves, are the opinions of the thinking men of the day in all countries to a very large extent affected, as to the state of art in the country, and as to the capacity of the people for producing great works of art.

Independently of the public attention naturally called to works of art of this kind, by their association and connexion with men of, perhaps, Continental reputation, or with events of perhaps international importance, public memorials are more open to public criticism, and more liable to be taken as examples of the art-progress of the country, because the sites that are or ought to be chosen, are naturally the best known, the most public, and the most conspicuous—the public square, the public gardens, the public parks: they stand out in front of the public buildings, may be the only object of art in a public park, or erected on the only resting and breathing place in a public crossing in a public street.

But wherever placed they always are objects of curiosity and interest, for some time after their erection, to the inhabitants of the city or town in which they are erected. And to foreigners and other visitors to that city or town, they become from henceforth special objects and things that must be seen, as long as that city lasts. Is it not so with such memorials abroad and in our own country towns that have not been before visited in the minds of those whom I am now addressing? Do not the memorials in the public streets, or in the churches have much to do with the character for art given by each of you, to the country or town you visit? If so, it is an important subject, both to the profession and to the nation. I will endeavor, therefore, to lay before you the principal things, that I consider necessary to be thought of and kept in mind, both in selecting and designing public memorials. I think that the designs for public memorials should always be selected by public competition, by which I mean one open to all the country, and not a limited one, in which some half dozen men are invited to compete.

I have been led to this opinion for the following reasons:—That public memorials, as usually erected, have the special peculiarity of being on a debatable land, between architecture and sculpture, and properly belonging to both; that, therefore, an open, unlimited competition has the advantage of putting before the promoters of the scheme in a clearer and a more impartial way than any other mode the respective merits in that particular case of the treatment of the subject in view, either in an architectural or a sculptural manner, or architecturally designed, combining both; that it affords to those who are to have the management of it and the selection of the mode of carrying it out the opportunity of receiving suggestions as to the peculiar fitness of some particular selection in a special case—happy suggestions, perhaps, that may altogether alter the mode in which the money subscribed is to be spent, and yet more fitly show respect to the memory, and hand down to posterity the peculiar characteristics of that peculiar man, than any other mode that could be devised.

I think it well that the committees in these cases—but in these cases, of course, only—should not too closely specify the peculiar mode of structure that they propose to raise.

I say that the precise kind or form of building should not be too closely specified only for this reason, because I am of opinion that, were the question whether architectural or purely sculptural memorials should be selected decided after receiving the designs, and not before, that in a short time those erected for the future would be much improved, and we should have a much greater chance of seeing in them that happy mixture which we now seldom see, and which I cannot but think desirable.

Public memorials may consist of any out of a great variety of structures, many buildings that are not necessarily so in themselves becoming so by being selected as suitable in peculiar cases; and few of us can otherwise than think that in raising some useful institution or public building, devoted to a special purpose, but of a nature to be useful to and promote the prosperity and wellbeing of the nation at large, the respect and gratitude of the nation are better shown than in any other way—that in this way, more than in any other, are the peculiar merits, peculiar labors, and peculiar character of the man recorded to whose memory and honor it is erected.

Can you better honor and show forth the peculiar character, labors, and merits of a scholar than by founding a school or college and calling it by his name?—or a philanthropist or public benefactor than by founding a hospital, baths, or other building of public use and benefit?—or by furthering in any manner the same objects which he in his lifetime labored to advance in his native town, or the town in which he dwelt and which he loved to improve and benefit, or in a place in which it is more wanted—a deviation from the ordinary rule which you know would be in accordance with the spirit in which he acted when he was alive?

So we will first consider the peculiar modes of treatment necessary to be kept in mind in this mode of raising a memorial to a public man by raising a building and institution of the kind that most harmonises with his tastes, objects, and labors during his lifetime.

In this case we must take care not to lose sight of the special object of the founding, in the useful objects of the building. A statue of the person to be kept in remembrance should be placed in a conspicuous position in the building, and

in the lower portions bas-reliefs should be introduced, where they can be well seen, representing his struggles, his labors, and the peculiar good he did; and the interior may very appropriately have among its decorations, views of the house in which he was born, the places most associated with him as the scenes of his successes or his useful labors; while other frescoes on the walls may be well filled with a series of historical scenes, in which he acted a prominent part. While, if he was a successful inventor, or helped materially to develop or improve some useful branch of manufacture, illustrations of the peculiar invention, peculiar mode of manufacture, and representations of the particular art-manufacture produced, may, if skillfully treated, help to fulfil the historical and memorial purposes of the building, and also to vary and enrich its decoration.

The commemoration of any great and good public man, by a single statue representing him, executed in either marble or bronze, and placed on a pedestal, is a custom which we find among the Greeks and Romans, and which we have derived from the Renaissance architects, who revived the custom of the Romans with their architecture.

In the various museums at home and abroad, we find some very beautiful examples of such, of emperors and citizens, graceful and dignified, mostly, however, by Greek artists. In the Museum at Naples are some fine examples of Roman equestrian statues. The Renaissance sculptors took these as models; as, for instance, Donatello is said to have taken the celebrated bronze equestrian statue of Marcus Aurelius, in the Capitol at Rome, as his model for his fine statue of Erasmo da Narni, commonly known as Gallemeata, executed for the Signoria of Venice about 1450. This was the first equestrian statue of modern times; this, a cast of which is to be seen in the Crystal Palace, is a fine example of its class, and one well worthy of study. Our own Charles the First is another early and fine example, as is, also, the pedestal of the artistic treatment of that important member of this form of memorial.

The designing and treatment of the pedestal is one of the weakest points in our modern sculpture memorials. Sculptors at the present time, seldom or never being employed as architects, and, therefore, not considering it necessary to study architectural composition, as did sculptors in the Renaissance times, their pedestals generally show this, greatly to the detriment of the whole composition. As commonly erected in our squares and streets, a single statue on a pedestal, without anything on that pedestal to indicate what the occupation, attainments, and achievements of the person represented were, always appears to me but a bare and empty way of commemorating a great man, or of representing the creative art of the country. I would at least add four bas-reliefs to it, if nothing more could be done; and in those four bas-reliefs much could be shown, of why the statue of that man was raised on the pedestal. Thus enriched and increased in value as a memorial structure, a naturally and yet majestically designed statue is, when placed on a really beautiful and elegantly proportioned pedestal, a graceful and pleasing ornament in the public street.

What a pity that so fine a statue as the Richard I., of Marochetti, should be on so miserable a pedestal; let us hope that the English copy of Foley's Hardinge will be placed on a pedestal more worthy of so great a work. A pedestal for an equestrian statue requires to be much higher, more important, and of a much bolder character than that at Westminster.

But as the principal ornament in a large space, a single statue on a pedestal is not sufficiently important, and something more of a structure is naturally called for; and then come very conflicting opinions as to what should be erected. Some have been brought up with the idea that nothing is so fitting as an obelisk, which we derived from the Egyptians, who did not, however, themselves use them for this purpose, but being precious on account of being monoliths, and on account of the cost of working and the cost of transport and raising in their places, they were accounted worthy of being dedicated to the gods, and their four sides contained the inscriptions setting forth the name of the King who dedicated them and the deity to whom they were dedicated. The Romans who transported them from Egypt were the first to use them as memorials or pillars of victory. But many, even now, seem to consider that they are the very thing, and that very thing is very often erected; but I must say that, with all respect for the ancient Egyptians—and a very great respect I have for them—though a grand object on certain sites, I am always sorry to see them erected in this country or in other countries for our national memorials, and the votaries of these massive remembrancers seem to me to admit their weak points by adding to them all sorts of devices which have little other effect than that of diminishing their grandeur.

If really elegantly designed and completely carried out, another very favorite form is grand and appropriate, although in its usual form objectionable from being a member of a building diverted from its original use; I allude to the single column with or without statue. The use of this and kindred forms for this very purpose is of very ancient date. In India we find pillars with very beautifully executed capital and surmounted by a lion, erected by Asoka in the middle of the third century B.C., commemorative of his having adopted the Buddhist religion and containing the creed and principal doctrines of Buddhism; Ferosee Shah re-erected one of these as a pillar of victory at Delhi. These are monoliths. In Cabul are two built examples of pillars, rudely imitative of these, probably Buddhist monuments commemorative of some sacred spot or great event. In Roman times we find them in the form of columns similar to those used in the support and decoration of their temples, but with this difference that several of them were ornamented with sculpture. At Alexandria was one erected by Diocletian; at Arsinoë by Alexander Severus, and at Mylassa. All these were Corinthian.

In Rome, herself, are two of the Doric order, that of Trajan and Marcus Aurelius. There is one shown in Mr. Fergusson's Handbook of a very elegant and suggestive form. The shaft is ornamented with a scale-like pattern of leaves, and its base is surrounded by eight statues; it is at Cussi, near Beaum, in France, and probably belongs to the time of Aurelian. Very near akin to these, and capable, I think, of more beauty, as well as being free from the same objections as the pillar, from being an essentially supporting member wrongly used when isolated, are towers, which, from very early date, have been used for this purpose; that is to say, as pillars of victory, in India, by the Buddhists, the Jains and the Mahomedans, and found erected by the latter, wherever their Saracenic architecture prevailed, especially in those countries where the custom had originally existed. At Chitore, in India, is a remarkably beautiful example of these towers, or pillars of victory, built in later times by the Jains; it was erected by Khumbo Itana, to commemorate his victory over Mahmoud of Malwa, in the year 1439.

In China, we find the pagodas erected as memorials. The celebrated porcelain

* A paper read by Mr. RANDALL DRUCE, before the Architectural Association, on 17th January.

tower at Nankin was erected in 1412, as a monument of gratitude to an empress of the Ming family. It is octagon, and 236 feet high, and owes its beauty of effect almost entirely to the brilliancy of the coating of porcelain, with which both the walls and both sides of its projecting roofs are covered.

The second bar padoga on the Canton River is also commemorative; it is a pillar of victory, erected to commemorate a naval victory; so that we see that pillars and their kindred forms have been both used from very early date for this purpose, and also in very widely parted, and different countries; and the Roman examples have been copied or taken as types of many similar memorials in Paris and all over the Continent. In Byzantine times we find them used at Venice, in front of the Doge's palace, and I remember a very beautiful little example of Italian Gothic work in one of the streets of Florence, supporting four canopied niches filled with sculpture.

I do not think that in this country we have been happy in our adaptations of the Roman form, not that they are allowed to have a fair chance, for who ought to judge of the merits of a structure till it is finished? and our Nelson column still lacks its lions. When shall we see them?

But as long as the Classic style was the only one in which this—in itself certainly good and appropriate form of memorial—was supposed to be admissible, it was difficult to do much that was original, or differing much from those already erected; but now, many thanks to a recent example set in this metropolis, we are set free, and columns as varied as the columns in our different churches and other buildings, may, at least, take their turn with other forms of memorials; and with their pedestals, ornamented by bas-reliefs, or supporters—animals, may be, or figures, bases, bands, capitals, and crowning figure, give great scope for skill in design, taste, and sculptural execution. A picturesque form is to be found in Switzerland, which I think is worthy of study: it is a short massive column, with carved capital, supporting a statue of some local hero, standing in the centre of the round or octagonal basin of a fountain or conduit, suggesting the useful combination in the streets of our towns of memorials and drinking-fountains.*

MR. DIGBY WYATT ON THE ARTS IN ITALY.†

THE name of Quintino Sella, the mathematician, economist, and orator, that of one of the most rising men of the present generation of Italians, will ever be held in esteem by his countrymen, if on no other grounds, from the honorable connexion which must always exist between his memory and that of the signal manifestation of Italian capabilities, in an industrial point of view, which will mainly engage our attention this evening—the first made since the yoke which has so long impeded their satisfactory development has been at least partially removed from the shoulders of a race whose attachment to Fine and Decorative Art has become proverbial.

To the Cavaliere Sella, and to his exertions in the Italian Parliament, that nation is indebted for the conversion of an Exhibition, limited, as originally contemplated, to the illustration of Tuscan manufactures only, into one in which evidence, greater or less, according to circumstances, is to be found of the artistic and industrial capabilities of almost every district of that united kingdom; whose existence as such, every well-wisher to the cause of liberty, and every one who honors the ancient traditions of excellence in design still preserved in that favored land, must ardently desire should be preserved.

The task of the critic who would attempt to minutely characterise individual productions, so far removed from the eyes of those he may have to address, as to render impossible any appeal on their parts from his judgment to material evidence, must, it appears to me, be alike unjust to those whose works may be criticised, tedious to those addressed, and too one-sided to be either interesting or profitable. I propose, therefore, this evening to take a broader view of the entire subject of the Italian Decorative and Industrial Arts than I should probably do, if the means of rectifying any errors of individual judgment on my part, were within the reach of those to whom I venture to offer the following observations.

The natural sequence of emotions most readily to be imagined as occurring to an educated Englishman on entering the Exhibition buildings at Florence would be, as it appears to me, somewhat as follows:—Firstly, his memory would revert to those old glories of the days of Florentine independence, of Genoese and Venetian magnificence, and of Roman Pontifical autocracy, in which the fine and decorative arts are known to have reached a pitch of perfection scarcely rivalled in the palmiest days of Greece and of the Augustan empire. He would naturally inquire what those old Italian arts and industries were, how far they co-existed and were united, and under what social conditions they were developed?

His second inquiry would naturally be, how much of that ancient power still lingers in the hands of the descendants of those by whom the original greatness was attained?

The third subject of investigation would probably be, after taking stock of the present, what materials still exist amongst the Italians likely to carry to a higher perfection than has been as yet attained in recent times the arts for which "*Italia la bella*" was once so famous?

Recognising, as no one can fail to do, the retarding influences which have so long operated to fetter and depress the wonted vivacity of that highly imaginative people, it is indeed an interesting problem to endeavor to trace the direction in which a greater degree of personal liberty than they have hitherto been permitted to enjoy may tend to revive those energies which have too long been overshadowed by a baneful condition of social oppression. From her past and her present may thus, to a certain extent, be augured an Italian future.

In all this, doubtless, there must be some moral for us; and the fourth aspect under which any Englishman, anxious for the augmentation of his country's greatness, would naturally regard the present evidences of capacity manifested at Florence, would be to consider what concurrent improvement his countrymen may derive from the lessons to be at present learnt in Italy?

Following this order of investigation, my remarks will be grouped in subordination to these four leading aspects, under which the subject may be regarded. We shall, therefore, consider first—and far too briefly for the grandeur of the theme—what the old Italian arts and industries were.

It appeared to those in whose hands the initiation of the Great Exhibition of 1851 rested, as likely to prove an important element in preparing the way for a

due appreciation of that great display, that a collection of works, illustrating the perfection to which industrial processes had been carried in ancient and medieval times, should be submitted for general study and investigation by the public previous to their being called upon to estimate the relative value of corresponding contemporary processes. Many of those I have the honor of addressing cannot forget the success which attended that Exhibition, inaugurated under the auspices, and mainly through the direct action, of the Society of Arts.

A similar idea seems to have struck the Italians, and to have led to the bringing together a very remarkable collection of specimens of ancient Italian technical art; mainly through the active exertions and public spirit of a Florentine medical man and distinguished connoisseur, the Doctor Guastella, whose energy has already tended to infuse new life into the administration of the Florentine museums. Several of the principal Italian families co-operated in this good work, the proceeds arising from which, it was determined, should be voted to charity.

Within the walls of a large house in the new piazza dell' Indipendenza, were consequently crowded together a great quantity of objects, illustrating almost all those industries with the choicest specimens of which Italy was wont, from the end of the fourteenth to the beginning of the seventeenth century, to supply the factitious necessities of the most highly cultivated portion of the royalty, aristocracy, and rich "bourgeoisie" of Europe.

With such examples of these arts as we may be now thankful to possess in the Museum at South Kensington, it is little necessary for me to dwell in detail upon the classes of objects collected in the Casa Guastella. It may be sufficient to say that bronzes worthy, if not wrought by the hands, of men such as Ghiberti, Cellini, Donatello, Michel Angelo, and John of Bologna, were not wanting. Neither were the finest Venetian glasses, Milanese and Ferrarese arms and armour, Siennese and Florentine illuminations, Umbrian Majolica, enamels of various kinds, goldsmiths' work, silver repoussé work, iron work, niello, medals, lavori di commesso, or mosaics, and coins, cuir bouilli, tapestries, rare tissues, lavoro all'Azzimina or damascening, tarsia, or marquetry, and marble, ivory, and wood carving.

Where so much was beautiful it seems almost invidious to dwell upon points of remarkable interest; but it would be treason to the royalty of excellence to pass over two or three objects especially celebrated in the history of art, and now brought under public notice after ages of seclusion, if not neglect.

The most interesting of all was probably that patera in bronze, which Vasari relates that Donatello worked for the noble Casa Martelli, to show how perfectly it was within his power to rival the exquisite fragments of antique bronze casting and chasing, which in his days were as much the rage among great Italian collectors as Majolica and "vieux Sèvres" have been lately among French and English. As perfect almost as it could have been when it left the hands of that rare artist, this beautiful piece of sculpture justifies all the praises which Cicognara has so lavishly bestowed upon it in his "History of Sculpture."

Another specimen, of little less historical interest, was the bust in marble, representing Marietta Strozzi, wife of Celio Caleagnini di Ferraro, by that great sculptor, who unfortunately died too young to leave much behind him, Desiderio da Settignano. Jealously preserved in the family of her descendants in that palace, the architecture of which, by Benedetto da Majano and Pollaiuolo, has mainly stamped the Tuscan palatial style with its easily recognised distinctive features, there can be no doubt of the true descent of this beautifully preserved work of art.

Another item, small in bulk, though great in artistic value, was also contributed from the same collection—a little key in chiselled steel, ascribed to Benvenuto Cellini, and, if not actually executed by him, eminently worthy of his most dexterous hand, and of all that skill which he appears to have acquired in the workshop of Paolo Arsago, the Milanese.

Probably, as far as unique curiosity is concerned, the most interesting groups of objects in this collection, were the very important series of coins of different Italian cities and mints; the medals of illustrious personages, by Pisanello, Sperandio, Cellini, Pollaiuolo, and others; and a very curious collection of cut and stamped leather work, which the energies of the purchasers for the South Kensington Museum may, I hope, ere this have acquired for our admiration in this country.

Important as the objects in this collection unquestionably were, as filling up the detail of the still-life of those pictures, in which the stately Gonzagas, Medici, Sforzas, Strozzi, and Dorias occupied the foreground, it is of course in the great monuments and permanent museums of the country that we learn to recognise how inseparable the perfection arrived at in these minor arts was from that greater sublimity attained in the noblest efforts of the architect, the painter, and the sculptor.

It is precisely in this union of imagination of the loftiest kind with perfect technical dexterity in art productions, on either the vastest or the most minute scale, that the great strength of the excellence of the finest Italian design in old time consists. All these relies, whether taking the form of gigantic churches, of stately palaces, of heroic works of sculpture, of extensive frescoes, of elaborate furniture, of pottery, glass, and even ornamental leather, show how absolutely indispensable to personal enjoyment art then was.

Every student of the "*Divina Commedia*" must remember the almost passionate terms in which Dante mourns over that transition from simplicity of life and manners to a luxurious indulgence of the intellect and senses, which no sumptuary laws, however stringent, were ever able to subdue. Long and vainly the nobles strove during the fourteenth and fifteenth centuries to preserve for themselves a monopoly in splendor, but wealth accumulating in the hands of the citizens ultimately broke up their ineffectual blockade. How, and with what results, may be traced in the chronicles of Villani and Corio; in the excellent "*Discorso di Guglielmo Manzi sopra gli spettacoli, le feste, ed il lusso degli Italiani nel secolo XIV.*" and in Muratori's grand collection of writers "*rerum Italicarum.*"

Out of the superabundant gains of the industry and commerce of Florence, S'enna, Geneva, Venice, Luca, Pisa, and Milan, and out of the accumulated riches drawn by an all-powerful priesthood from its spiritual tributaries in all parts of the world, one cannot fail to be struck with the very large proportion which was obviously expended in supplying this apparently insatiable craving for beauty. Sums of money which would frighten the nobles, commercial or hereditary, even of this kingdom, were lavishly expended on the great monuments of Italian art. Taking, for instance, such a city as Palermo, we find, even at the present day, not tens, but twenties and thirties of churches lined throughout with marble mosaic of the most costly description. The riches at

* To be continued.

† A Paper "On the Present Aspect of the Fine and Decorative Arts in Italy," with especial reference to the recent Exhibition in Florence," read before the Society of Arts on Wednesday, January 22nd, by Mr. DIGBY WYATT.

St. Mark's, at Venice; St. Peter's, at Rome; the Certosa, at Pavia; St. Anthony, at Padua; and the churches of the Annunziata and San Matteo, at Genoa, appear almost beyond estimation; while not only in monuments such as adorn these cities is the boldest dimension and the grandest scale adopted, but every inch of wall surface, and every piece of church furniture, however insignificant, is made as elaborate as human ingenuity and human hands can make it.

To such an exuberant extent was this apparent craving for enrichment indulged, that where, as happened in many cases, funds were wanting to complete the ambitious designs of the founder of some great monument, his successors, rather than leave the work altogether unfinished, have endeavoured to realise by paint and every kind of ingenious expedient, the effect so ardently desired by the original founder of the edifice. Hence proceed many of those illusive perspectives which almost convert flat ceilings into airy cupolas, and carry out the eye of the visitor in the *salone* or grand apartment of the *piano nobile*, or principal floor of an Italian residence, through apparently interminable arcades, to an exuberant landscape, alive with statues and fountains.

An amusing definition of what an Italian of the sixteenth century understood as indispensable domestic ornaments may be found in a little book written by Castiglione Saba, and entitled "*Ricordi overo Annuastramenti*," for a reference to which, and indeed for the loan of which, I am obliged to the kindness of Sir Charles Eastlake. In one chapter the writer tells us how pleasing to the eye and how necessary are terra cotta by such men as Paganino da Modena; musical instruments by Lorenzo de Pavia, or Bastiano da Verona; that carvings should be supplied by Michel Angelo, Donatello, Alfonso Lombardi (one of the great Venetian Lombardi), and Cristoforo Romano. Antique medals, he says, are necessary, as well as those of Giovanni Corona, of Venice. Verocchio and Pollaiuolo, we are told, should supply the bronzes; and cameos and intaglios should be by Pietro Maria, and especially by Giovanni di Castello.

We may pass over the list of worthy painters given by the author, but not so the terms in which he notices the marquetry works of Fra Damiano da Bergamo, and the armour and glass work, the current productions of Milan and Venice. To fittingly supply such necessities no artist was too proud, and there yet exist, more particularly in the great Florentine collection of drawings by the old masters in the galleries of the Uffizi, ample evidences of the powers in designing ornament, as applied to industrial productions, possessed by artists whose more special fame rests upon that which we habitually contradistinguish from such classes of art, by designating as fine art. To enumerate a few of these may not be unprofitable, by way of directing the attention of young artists to some of the worthiest masters of their craft.

As designers of wood and marble carving we note the names of Baldassare Peruzzi, the great Siennese architect; Giorgio Vasari, Raffaele da Monte Lupo, Michael Angelo, Montorsoli, Guglielmo della Porta, Il Riccio (the author of the magnificent candelabrum in bronze at the Church of St. Anthony, at Padua), Giovanni Battista Trotti, better known as Il Inolosso, Lilio da Novellara, and an artist of exquisite refinement, Francesco Salviati. For stucco work we meet with designs by Giovanni Battista, Cremonini, and Marco da Faenza; and for friezes with those of Gaudenzio da Ferrara, Giulio Campi, and Amico Aspertini. For miscellaneous designs of all kinds we find beautiful studies by Piermo del Vaga, Francesco Zuccheri, Polidoro da Caravaggio, and Prospero Fontana. Cellini, Bernardino Pochetti, Giulio Romano, and many others, brought their great accomplishments to bear upon the production of beautiful metal work, while Pellegrino, Tibaldi, Matturino, Morto da Feltro, Giovanni da Udine, Baceniacca, Pinturicchio, Pietro Perugino, and many others, shone in arabesques and cognate descriptions of design. Their ability indeed, to minister to the smaller wants of the great Italian nobles, led, in many cases, to the artists so exercising their lesser talents (if they may be so described) receiving commissions calculated to bring out their capabilities in the loftiest directions.

Any one desirous of tracing the important part which the requirements of industrial art played in the lives of many of the most eminent Italian artists, and which I cannot now do more than point to, may find ample materials awaiting his investigation in the autobiographies of Ghiberti and Cellini, in the writings of Vasari and Baldinucci, in the "*lettere Senese*" of Della Valle, in the *Italienische Forschungen* of Von Rümour, in the *Beiträge zur neuern Kunstgeschichte* of Forster, and last, not least, in the collections of original notes and documents illustrating the history of Italian art, by Gaye, Gualandi, Carlo Pini, and the brothers Milanese.

Did time permit, I would willingly dwell in detail on mosaic, sgraffito, instarsiatura, fresco, and gesso painting; terra cotta, Majolica, stucchi, niello, glass making, and others of those arts, transmitted by the curious MS. treatises known as "*secreti*" from generation to generation, in which Italy so long enjoyed a monopoly of celebrity, if not of actual production; but I feel that the second branch of our inquiry this evening is too important to be set aside for matters even of such interest as I do not doubt these ancient arts of Italy might be made to assume.

Turning from their yesterday to their to-day, we cannot but observe that, in almost every department in which their ancestors excelled, the modern Italians exhibit, if not a considerable power of production, at least very respectable exceptional proficiency; and if not within the walls of the Florentine Exhibition, at least in contemporary art-productions elsewhere, we may trace a partial revival of almost every ancient process known to the Italians of Medicean times.

It is probably in the purely Fine Arts that the principal degeneracy is to be recognised; in the strictly technical there exists by no means the same falling away. The reason for this may not be hard to trace, in the amount of liberty which has for many years past been enjoyed by the lower orders, as compared with that moral and mental subjection in which the middle classes have been held. Whilst every-day necessity, and the passage of interminable "*forestieri*," have created sufficient demand to stimulate the capabilities of the workmen, the apparent hopelessness of their careers has unquestionably deterred many who, from the middle classes, would have supplied proficient artists and designers, from entering upon those severe studies by which alone excellence in the higher branches of art can be attained.

To proceed with some little method, it will be well to take first of all the three generally received fine arts—Architecture, Painting, and Sculpture; and then the leading art-industries in succession, noting briefly the apparent condition of each, in Italy at the present date.

With regard to architecture it may be observed that the pernicious influence exercised by Bernini and Borromini, whose trivialities obtained excessive vogue

during the greater part of the seventeenth century, tended to the production of that *rococo* style which caused a great deterioration in the florid ornament of the Roman, Venetian, and Northern Italian schools. But extravagant as Bernini was, it would be unjust to deny that he frequently redeemed his excesses, as in the colonnade of St. Peter's and in the Church of St. Agnese, in the Piazza Navona, at Rome, by great facility of design and a certain not unobvious bravura of style. Borromini's great follower, Guarini, out-Heroded Herod, and demonstrated by an *argumentum ad absurdum*, the ridiculous consequences of adopting the whimsicalities of Borromini.

The brilliant talents of Vanvitelli, and the majestic scale upon which he worked out the immense palace at Caserta, tended to maintain the dignity of his art during the greater part of the eighteenth century; and showed that magnificence and grand conceptions of pictorial effect had not yet deserted Italian architecture. From his death, in 1773, architecture, and ornament also, greatly declined; and although monuments upon a large scale have been frequently erected, since that period in Italy, but few of them are worthy, in any quality excepting that of scale, to rank with the purer taste of earlier times.

The feeble Classicisms of the style of the Empire were generally slavishly reproduced in Italy during the early part of the present century; and until comparatively recent days little of considerable merit has been executed.

The works of Piranesi, Albertoli, Ciccognara, and Canina, and the illustration principally by foreigners—such as Percier and Fontaine, Mazois, Grandjean, Famin and Montigny, Gouthier, Letarouilly, Zahn, Gütensohn, and Thürmer, Grüner, Taylor and Creey, Willis, and Hessemer—of their great monuments of art, have led to a return to a purer class of architectural ornament than had been previously in vogue; while the earnest writings of the Count Selvatico, and the translation of Rie's "*Poésie Chrétienne*," have introduced to the Italian architects those rational principles of design, including the treatment of constructive form and of ornament, originated amongst us by the younger Pugin.

The great scale of the existing edifices, and the reparations which it has been necessary to make from time to time to save them from destruction, have constantly maintained Italian artisans in the practice of rivalling the ancient work; so that in every department of building hands at least abound perfectly capable of carrying out the most difficult designs.

No better illustration of this abundant material power could probably be given than the rapidity and dexterity with which the buildings for the Exhibition were adapted to their present purpose in a few weeks only, under the skilful direction of the architects, Signori Presenti, of Cortona, and Martelli, of Florence.

The feeble academic system which has until recently prevailed, and under which the professional chairs were not unfrequently occupied by political parasites rather than by duly qualified professors of real abilities—coupled with the lack of occupation—has certainly enfeebled the powers of the last generation of architects in Italy, although there are, of course, some honorable exceptions to such a reproach.

Among them I would place conspicuously the Cavaliere Niccolò Matas, of Florence, who is now on the eve of completing a work which must for ever do honor to his country. I allude to the restoration of the façade of the Church of Santa Croce, which is being conducted upon a scale of nobleness worthy in every respect of the building in which are deposited "*ashes*" which, as Byron says, are in themselves "*an immortality of dust*." The whole of this work, which is of enormous extent, is carried out in different-colored marbles, wrought with an exactitude worthy of the celebrated masonry of the shrine of Oragna, in the Or San Michele, so highly praised by Vasari. The sculpture is being executed by the most distinguished sculptors of Florence, and the result of their combined abilities is such as could scarcely, I believe, be rivalled at the present time by designers, artists, and workmen in any of the capitals of Europe.

Scarcely less praises should be awarded to the authors of the noble restoration now making of the Bargello at Florence, the old palace of the Podestas.*

THE LENDAL BRIDGE, YORK.

ON Friday week the Lendal-bridge Committee met Mr. Page at the Guildhall, to take into consideration the tenders for the ironwork of the new bridge to be erected across the Ouse at Lendal. The following sent in tenders, and the estimates approximated to the amounts stated:—

J. Whitelaw, Dunfermline	£6,012
J. Carrick, Pimlico	5,713
Cliffe, Bradford	5,023
Handyside and Co., Derby	4,920
Randallstiff, London	3,744
Hawks, Crawshaw, and Co., Gateshead	3,426
Calvert and Co., York	3,317
Head, Ashby, and Co., Stockton-on-Tees	3,170
The Brynbo Iron Company, Wrexham	2,953

The Committee decided to accept the tender of Messrs. Hawks, Crawshaw, and Co., of Gateshead. Including some extra work, which will require a particular description of iron to be employed in some places to strengthen the bridge, their contract of £3,426 will be increased, it is expected, to £3,611. This amount, however, will not cover the entire cost of the ironwork, inasmuch as the cross girders and the corrugated plates belonging to the foot and carriage way of the fallen bridge will have to be refixed in the new structure at a cost of £3 10s. per ton. By the tender Messrs. Hawks, Crawshaw, and Co. undertake to complete the work within six months. Workmen are now engaged in removing the fallen girders of the bridge, and their labors will be completed in a few days. Mr. Graham, the resident engineer, has arrived in York, to superintend the erection of the new structure, and operations will be commenced almost immediately.

Chesterfield National Schools.—These schools, thoroughly restored internally and rebuilt adjoining the street, comprise the old school-rooms, 47 feet long each by 27 feet wide, with new class-rooms, 20 feet by 14 feet, to each school-room, with porches, tower, and staircase, closets, &c. The whole of the buildings are of a substantial character, built of the best pressed bricks, interlined with black and white brick bandings and stone dressings. The style adopted by the architect is of early domestic character. All the timbers in the roofs and ceilings are exposed to view, being stained and varnished, and each schoolroom is fitted with desk and seats of the pattern recommended by the Committee of Council on Education. Care has been taken to render the warming and ventilating of the schools complete. The boys and girls have each a separate playground, with sheds and conveniences. The works have been executed from the designs and under the superintendence of Mr. S. Rollinson, architect, by Mr. Joseph Watts, builder, for the sum of £630, and without any extras.

* To be continued.

ON THE SANITARY CONDITION OF THE DWELLINGS OF THE OPERATIVE CLASSES IN EDINBURGH.*

FIVE-AND-THIRTY human beings, living, moving, working among us, lie down at night under the shelter of their own roof, and in the security of their own beds—their eyes closed in sleep, a sleep which, to many of them, will know no waking till that trumpet sounds when the graves shall give up their dead. The fact is awful and appalling. The tall, skeleton-looking walls still standing in grim desolation, displaying, as if in mockery, trifling articles of household gear saved from the universal destruction; the torch-light searching for the dead and dying, the covered biers, conveying the dead to their temporary resting-places, and the hundred and one concomitant attendants of such an event, all lend a dramatic interest to it, and throw gloom and horror over the neighbourhood. Such startling incidents are surely designed by Providence to arouse and warn us; and at this moment they seem, to a certain extent, to have done so, for many are now concerning themselves regarding the temporal well-being of their poorer brethren who lately bestowed not a thought upon them. I would not detract from the solemnity of that event, or say aught to lessen the impression which it has made, but I cannot help observing what a small proportion the number of those who thus miserably perished bears to those who, unnoticed and unknown, are daily and hourly sacrificed to a violation of the laws of life, as palpable and as monstrous as was the violation of those laws of mechanics which caused that building to give way. It is not enough that architecture should concern itself with the outward beauty or the inward stability of the erections which it designs; intended, as they are, to shelter man from the inclemency of the weather, they should not be constructed so as to expose him to the attacks of more dangerous foes, and as you have already been so ably addressed in this place by Mr. Cousins on the first branch of the question, I purpose to restrict myself very much to the second, and to endeavour to show how unfit the dwellings inhabited by many of our artisans are for their purpose, the fearful consequences which their faulty structures involve, and, lastly, to consider whether any fitting remedy can be applied to the existing very faulty state of matters. The first sentence of one of our most recent treatises on physiology, or the science of life, is to the following effect:—"For the maintenance of the life of man three chemical conditions must be complied with—he must be furnished with air, water, and food." The philosophical explanation of this necessity is not difficult. No part of a living mechanism can act without wearing away, and for the continuance of its functions there is, therefore, an absolute necessity for repair; in proportion, then, as these wants are supplied will be the strength and health of the individual, and, therefore, of that aggregate of individuals which we term the community. As civilisation increases, cities enlarge in these; in olden times, for the sake of the protection afforded by their walls against the rapacity and cruelty of foes, and in modern times, on account of the value of the land on which they stand, the inhabitants are more or less closely crowded together, and an artificial state not very conducive to health is induced. The nomadic savage roams at large over the boundless and airy plain, and pitches his tent by the side of some fresh and pure fountain; but though cities have their advantages, their erection certainly compels us to abandon some which were possessed in the savage state. Take the conditions of life I have mentioned in order, and first of air. When we examine the scientific history of the air we breathe, we are struck with the wondrous provisions made for establishing its due proportions and preserving its purity, proportions which cannot fail to be interfered with, and purity which must be sullied by the vapors and gases which human beings, crowded together, unavoidably generate. It has been calculated, with apparent truth, that the materials taken into the human body as food and drink are rendered back again by the adult, to the amount of a ton and a half annually, in other, and in what we might call viler, forms, after having subserved their purposes in the economy. The average amount, as determined by the experiments of Seguin, escaping by pulmonary and cutaneous exhalation alone is upwards of two pounds a day. Thus, from the decay of animal and vegetable matters, from the very presence of living animals, from the combustion necessary for the warming of our dwellings, the preparation of our food, and for the carrying on of the numerous manufactories which the necessities or the luxuries of man have created, various chemical compounds are produced, many, or should I not say most, of which, being volatile or gaseous, ascend and mingle with the atmosphere, rendering it less fit for respiration. We have no chemical test delicate enough to detect the presence of many of these, but, nevertheless, like the latent miasma from the marsh, they may do their work, and poison the system that inhales them. And along with air may be classed the cheering light, deprived of which plants and animals alike languish; for it is scarcely possible to imagine a supply of pure air without at the same time a supply of good light. To secure these, then, we must have ample means for removing those impurities which are so largely the source of contamination of the air, the supply of free and pure air by ventilation; the lessening and abating of all that is noxious in our various manufactories; and, lastly, a sufficient supply of good water. This last I have already classed under the necessities of our being. Returning to our first proposition, we find that three chemical conditions are essential for life—air, water, food—and that the whole science of sanitary economy is occupied in deciding how these are to be supplied, most speedily, most abundantly, and most cheaply. Our physicians, who have the most ample opportunities for such observations, are now demonstrating to us that, precisely to the extent to which we violate these necessities of our existence, to the same extent will the natural consequences of sickness and death follow. Thus Dr. Murchison, in his elaborate essay on the causes of continued fever, states as a legitimate induction from very extended observations, the two following propositions among many others:—"Overcrowding, with deficient ventilation, and destitution, appear to be the essential causes of typhus and relapsing fever, and to be capable of generating them *de novo*; while there is no evidence that they have any such influence over typhoid fever." "There are many circumstances which tend to the belief that the emanations from decaying organic matter, or organic impurities in drinking water, or both of these causes combined, are capable of generating typhoid fever." Again, in the Report of the Royal Commission appointed to inquire into the sanitary condition of the British Army, presented in 1858, the relation between overcrowding and tubercular disease is clearly shown, and when we bear in mind how many diseases the tubercular diathesis comprehends, and the low state of vitality and therefore incapacity of resisting or recovering from the attack of any disease which it involves, we can form some

idea of the wide-spread misery which it engenders. It is an old maxim, that when the cause is taken away, the effect ceases. If, then, so many diseases arise from and are clearly dependent on bad sanitary arrangements; and if so many others are thus aggravated, causing death from them in some cases and a protracted recovery in others, it follows necessarily that, if these defective arrangements were remedied, disease, suffering, or death, would be mitigated and controlled. In Edinburgh alone about 4,200 die annually, while of those 20-3 die of zymotic (epidemic and contagious) diseases which are to a great extent preventable, and many others of diseases which, with proper care, might be altogether banished—as the plague and jail fever have been from our cities, and the scurvy from our navies. From very extended observations, it has been ascertained that the number of persons dying annually in a tolerably healthy locality is 170 in 10,000. The population of Edinburgh, according to the last census, was 168,098, or, in round numbers, 168,000, which would allow at the death-rate of a tolerably healthy community 2,856 deaths annually. But the actual mortality, according to the registrar's return, is 4,200, leaving an excess of 1,344 deaths which might be prevented every year by raising the physical condition of our city. If this be the excess over the whole town, what must it be in the more unhealthy districts? If the preventable deaths be so largely in excess, the preventable illnesses must be still more so, and every sick man, whether rich or poor, as an unproductive consumer, is a burden more or less direct on the community. Thus we arrive at some idea of what the annual waste of our resources is on account of our low sanitary condition. At first sight it would appear that no city could possibly be better circumstanced than Edinburgh for the due carrying out of sanitary arrangements. Other large towns—as Glasgow, Liverpool, and Newcastle, commencing on the sea-shore—have gradually extended inland; but the remarkable character of the site of Edinburgh has influenced to a considerable extent its mode of growth. It is built on a series of ridges or hills, with intervening valleys, affording remarkable facilities for drainage operations, while they admit a free sweep of wind along our streets—too free in the opinion of many visitors. In the middle of the fifteenth century, only the High-street and the Canongate, with the adjacent wynds, would appear to have been built, and very little more was included in the first city wall, which was erected about 1450. After this the Cowgate, then an important suburb, was erected, and the alarm created by the battle of Flodden caused the wall to be extended so as to encircle it. For 250 years after this the extension still went on, but only in an upward direction; the closely-packed houses on the slopes on either side of the central ridge of the High-street were being perpetually augmented in height by the superaddition of stories, and, being separated only by closes or wynds, were almost impervious to light or air, while the absence of all drainage or means of removing soil from the houses increased the discomfort of the inhabitants, and gave "poor old Reekie" a somewhat unsavoury reputation. You must all remember the fearful sufferings of Mrs. Winifred Jenkins, who "reports that at ten o'clock at night the whole cargo is thrown out of a back window that looks into some street or lane, and the maid calls 'Gardy loo!' to the passengers, which signifies 'Lord have mercy upon you,' and this is done every night in every house in Haddingburgh; so you may guess! Mary Jones, what a sweet savor comes from such a number of profuming pans! But they say it is wholesome, and I truly believe it is; for, being in the vapors, and thinking of Isabella and Mrs. Clinker, I was going into a fit of asterisks, when this whiff, saving your presence, took me by the nose so powerfully that I sneezed three times and found myself wonderfully refreshed." Captain Burt, of the Engineers, who was employed in the construction of the military roads about 1715, thus describes the same scheme, and oppressed with the filth of Edina, pathetically asks, "for which of his sins he was sent into such a country." "There happened nothing extraordinary between this place and Edinburgh, where I made no long stay. When I first came into the High-street of that city I thought I had not seen anything of the kind more magnificent. The extreme height of the houses, which are for the most part built of stone and well sashed, the breadth and length of the street, and (it being dry weather) a cleanliness made by the high winds. I was extremely pleased to find everything look so unlike the descriptions of that town which have been given me by some of my countrymen. Being a stranger, I was invited to sup at a tavern." On leaving, "being in my retreat to pass through a long narrow wynde or alley to go to my new lodgings, a guide was assigned me, who went before to prevent my disgrace, crying out all the way with a loud voice 'Hud your haunde!' The throwing up of a sash, or otherwise opening a window, made me tremble; while behind and before me, at some little distance, fell the terrible shower." Then, as now, those in power were occasionally roused from their supineness by the advent of pestilence or the fall of a house; a few insufficient steps were taken, and then all lapsed into the former state of easy security. Thus, in 1721, there being an apprehension of the plague visiting Edinburgh, the Town Council consulted the College of Physicians, who returned an answer which I have had copied from their minutes, clearly showing that the principles of sanitary reform, supposed to be a modern discovery, were then well understood, and that our want of attention to the arrangements conducive to health has arisen rather from indifference than from ignorance of the consequences of neglect. The recommendations of the College may be condensed as follows:—1. The draining of the North Loch, then a pestilential swamp. 2. The doing this with all convenient speed, "that the mud and filth contained in its bottom may have time to harden and dry gradually before the sun returns to his heat and light." 3. The formation of a canal in the centre, with a constant supply of running water to carry off impurities. 4. The removal of slaughter-houses and dung-hills to some considerable distance from the town. 5. The effective cleaning of the streets, closes, and courts. 6. The erection of "houses of office" at convenient distances and in convenient places. 7. Dust carts to go round, and on the blowing of a horn servants to bring their filzle to them, and a penalty to be imposed on any one throwing filth over a window. 8. That all persons, hospitals, and public buildings be kept neat and clean. 9. That all gardeners be enjoined to bury decaying vegetable matter. 10. That all vagrants be removed.*

MEMORIAL TO THE LATE MR. BRAIDWOOD.—A tribute to the memory of the late Mr. Braidwood has been raised by the members of the M, or Southwark division of police. It is of Portland stone, and designed and executed by Mr. S. H. Gardiner, of the New Kent-road. It is intended to be placed against a wall, and supported by iron brackets in such a position as to mark the spot where Mr. Braidwood fell beneath the ruins.

* From a Paper read before the Architectural Institute of Scotland, by Dr. ALEXANDER WOOD.

* To be continued.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN Ordinary General Meeting of this body was held on Monday evening, at their Rooms, Conduit-street; Mr. M. DIGBY WYATT, V.P., in the chair, in the absence of the President, Mr. Tite, M.P., who was prevented from attending by a severe cold.

Mr. T. HAYTER LEWIS, hon. sec., having read the minutes of the last meeting, which were confirmed, drew attention to some specimens of zinc sent for inspection by Mr. James Edmeston, and which that gentleman believed to be hitherto unequalled in England.

The Great Exhibition.—The CHAIRMAN stated that the Art Designs Committee for the coming Great Exhibition, would be glad to receive contributions of designs for ceilings and mural works, which could come under the head of art manufacture, by Gibbs, Adams, Chambers, Soane, Smirke, Barry, Jones, Wren, and other deceased architects. It would be well for gentlemen who might have some of these things in their possession, to send them to the Committee as contributions for the Exhibition.

Mr. G. GODWIN was glad this subject had been mentioned by the Chairman, because he believed a great misconception existed out of doors, in reference to the obtaining of space as many were of opinion that if they had not already applied for space, they need not apply now, as being too late. Now, he knew that many would contribute pictures for the Exhibition, if they were aware they would still be received, to make up a series, or to complete any portion of the collection.

The CHAIRMAN said he was not a member of that Committee, but he believed the arrangements for the pictures were very nearly completed, though no doubt eligible specimens would still be received. But the arrangements of the Art Designs Committee were not in a complete state at present.

The Essentials of a Healthy Dwelling.—Mr. HENRY ROBERTS then read a paper entitled "On the Essentials of a Healthy Dwelling, and the Extension of its Benefits to the Laboring Population," which will be found elsewhere.

Mr. CHADWICK remarked that humanity was greatly indebted to Mr. Roberts for the persevering and energetic manner in which he had brought forward the *generalia* of his paper before different societies and institutions in different countries of Europe. But he thought that in the present state of the subject they might go beyond *generalia* and treat the subject analytically. There were grave questions to be treated analytically, such as ventilation, the best mode of warming rooms, the best construction of walls, and of windows. As to ventilation, what was the minimum size of a room for five persons, for two persons, and for one person? Then, what was the best apparatus for warming? Again, the abolition of the cesspool being agreed upon, what was the best apparatus that could be used?—as some said it required two gallons of water, and others only half a gallon. What was the best method for cottage dwellings? The cheapness of construction would be covered very much by the amount of consumption, and the amount of consumption increased when those points were settled. In the case of warming, for example, the poor man's fireplace in London had generally consumed about one hundredweight of fuel, while in Warwickshire and other districts the quantity consumed was two hundred or more. Now, the question was, which was the best fireplace to be constructed? And another question was, what was the best kind of wall? If they went abroad to crowded residences they would find that where a body had been retained any time the dead man's smell was adhering to the wall. Damp caused many evils. The common brick absorbed about a pint of moisture. At the time of the Board of Health, when in some districts fever and other diseases were in every house, the people were ordered to remove for safety, and the houses were ordered to be lime-washed. In some cases the landlords would not do it, and the consequence was, that when the population returned, the disease also returned. As to absorbent walls, the common brick absorbed something like a pint of moisture, and in a poor cottage every pint of moisture got away was a good. They got larger bricks, hard-burned, and non-absorbent. They got out some years ago some examples of walls of that kind, the 9-inch wall made with bricks of a very large size, such as 9 by 18. And they were made cheaply, at something like 4s. the superficial yard, instead of 4s. or 5s. for a common wall. He remembered the late Mr. Thomas Cubitt saying to him that if he introduced a new kind of brick the workmen would strike, because it was new. Only recently when down in Lancashire, he was told that where Platt's machine was introduced for making bricks of immense pressure, and having the quality of non-absorbency, the workmen had struck, and it was said that some were induced to do so by the brickmakers. This analytical course of examination would be most profitable in the progress of this great question, and having determined the several points involved, the next consideration would be how they were to be put together in the production of a cottage, and lead to a reduction in its price, a great desideratum in the matter. Improvements had been made, especially in bricks, and in the construction of rooms for married non-commissioned officers, in reference to which he had the honor of submitting to the late Lord Herbert some suggestions in detail. The settlement of the materials, and of the apparatus to be employed should be well considered; the analytical process was the best mode of proceeding, for by it the greatest good could be produced.

Mr. JENNINGS was heterodox upon some points the lecturer had insisted upon. As to the removal of cesspools, in building cottages in the country it was impossible for them to get rid of cesspools. If cottagers were to have the benefit of their gardens they must have cesspools, and he spoke as a proprietor of cottage property in the country. What was wanted was to get people to properly occupy the cottages; there was not the slightest difficulty in getting people to build cottages if they got tenants to occupy them properly, which there was great difficulty in getting. The letting of rooms was a most important question, but they could not stop it. He found that his tenants would let the rooms, and if he turned them out for so doing he should be considered a harsh landlord. He then proceeded to observe that the Nuisances Removal Act had not worked advantageously. He had been asked to carry out certain sanitary matters at some of his cottages, but he found it would be better to pull down the cottages than comply with the requirements. Other requirements were made by a sanitary committee, but he declined to comply with them, ejected the tenants, and shut up the cottages for two years. The great difficulty as to cottage property was that the proprietors could not get good tenants. He could not agree with Mr. Roberts that chalk was not healthy; he thought it was as good as gravel for building cottages. As to the question of ventilation; he believed it was not so difficult if they could but persuade the occupiers not to paste up the ventilators. He had carried up ventilating flues with every stack of chimneys for cottages, and had found that very successful. It was singular, but he had found that tenants sometimes selected cottages which had not so many conveniences as others which they might have had. As to walls, they could not use the hard burnt bricks practically as they would not take the mortar. As to ventilation, it was the fashion to use casements to cottage windows, but that was a mistake. It was indispensable, if they expected to get places ventilated, they should have sashes. The cottages would not have the ventilation if casements were used. Then, again, as to roofs, slate had an advantage over tile for roofs. It was found convenient to have cottages covered with slate, and felt under it. Wooden floors ought not to have floorcloths.

Mr. G. GODWIN said the subject they had met to consider was an enormous question. They knew for certain that thousands were dying every year because the arrangements of dwellings were not right, and that want of circulation and ventilation produced fever and other diseases. They knew that emanations from decaying matter would produce typhoid fever, which was desolating the homes of this country, and which had deprived us of that most valuable life—the Prince Consort. Therefore, if they knew that attention to principles which were clear was right, and that the application of these principles would produce good, they should approach the question with calmness and seriousness, and endeavor by all the means in their power to advance their knowledge on the subject. The cause of so many deaths was the non-application of the knowledge they possessed for the benefit of the population. He then suggested the propriety of appointing a committee of the Institute to investigate all the recent improvements, and to investigate the possibility of constructing proper houses. A brick might be impermeable on the outside, and so arranged as to adhere to mortar. Let them make investigations in order to have an impermeable house, and let them endeavor, if possible, to have ventilated rooms. He then referred to the bad ventilation of our bed-rooms, and thought most seriously that that matter should be taken up. They ought also to see whether they could not improve roofs. The only three clauses of the Building Act relating to sanitary matters had proved utter failures. If certain conditions were obtained, and principles laid down, they should then be able to procure a healthy house.

Mr. ROBERT KERR moved a vote of thanks to Mr. Roberts for his paper, and suggested that the discussion should be adjourned to a future meeting.

Mr. HORACE JONES seconded the motion, which was carried.

The discussion was then adjourned to that day month.

Mr. ROBERTS remarked that if his paper had been fully read, instead of a large portion of the earlier part having been omitted, much that fell from Mr. Chadwick and Mr. Jennings would have been found referred to in it.

ARCHITECTURAL ASSOCIATION.

AN Ordinary General Meeting of this body was held at the rooms, 9, Conduit-street, Regent-street, on Friday evening, Mr. T. ROGER SMITH in the chair.

Nominations for Membership.—The following gentlemen were nominated for membership and will be balloted for at the next meeting:—Mr. J. Johnson, 10, Cliff-street, New North-road (proposed by Mr. Arthur Smith, and seconded by Mr. H. A. Reeves); Mr. North, 35, Radnor-street, Chelsea (Proposed by Mr. Arthur Smith, and seconded by Mr. T. M. Rickman).

The Collectorship.—The CHAIRMAN announced that Mr. Moody had been appointed collector of the Association in the room of Mr. Gould, resigned.

The Florence Cathedral Competition.—Mr. RANDALL DRUCE drew attention to the competition for the execution of the facade of the Cathedral of Florence, which was open to the artists of Europe, but the *Nazione* of Florence did not contain any particulars, and he wished to know if any member could give him any information respecting the competition. The *Nazione* gave no information respecting the dimensions and other matters.

The CHAIRMAN thought the Italian Legation would probably furnish the desired information. In the case of the prisons at Turin and Genoa all the requisite information was to be found at that Legation.

Public Memorials.—Mr. RANDALL DRUCE then read a paper on Public Memorials, which will be found referred to in another portion of this Journal.

The CHAIRMAN said the meeting had heard Mr. Druce's very interesting paper, which was peculiarly appropriate at the present moment, when a national feeling existed for the erection of a great memorial to a very great man, and then invited observations on the paper which had been read.

Mr. T. M. RICKMAN remarked that many bodies had thought to a considerable extent upon this matter within the last few months, and he was of opinion that Mr. Druce had brought before them a great variety of matter which ought to have great influence on the public in settling what was to be done in respect of our new great memorial. He thought that a great number of the best memorials which Mr. Druce had called their attention to were those in which a greater expense than was necessary had been showered on what was useful. The gates or entrances to the bridges were often made for the purposes of defence, and the idea of arches arose from the idea of having good arches and portals to the city. We had not those at the present day, and had hardly any use for arches at the entrances of our bridges, but they might be beneficially used, at the approach to the Hungerford Suspension-bridge, and at the High Level-bridge at Newcastle. The monuments at Munich and other places were used as drawbridges at one time—that was, they were not passable unless the holders of the town thought fit to make them so. As to many other things which Mr. Druce pointed out, he thought it would be found that there had been some sort of use to which a national monument should be appropriated. If we had some such place in London, where such monuments should be placed, and where people could go to look at them as matters of interest, without looking at the building solely, such buildings would become possessed of greater interest. He could not blame people for giving churches an interest as monuments, and thought that in any memorial to the late Prince Consort something of great public utility should be given, without simply pointing out the talent of the deceased, or of the person who prepared the memorial. The greatest public utility should be combined with taste, and how that should be done it was for architects and sculptors to say. He thought, however, that architects should come forward, and not let the matter be solely taken up by sculptors. A great number of the monuments that had come down to us bore the names of the founders attached to them, because very large sums had been left by individuals themselves for certain purposes. King Edward VI. was known not so much for politics as for the schools he founded; and in Edinburgh there were a number of very important public buildings, erected at the expense of Heriot, Donaldson, and others. Heriot's Hospital was the first of them, the oldest, and by far the most interesting of the number: the others seemed simply monuments of the riches the founders left, and the conduct of those institutions was rather a source of difficulty than of advantage to the parties connected with them. In St. Bartholomew's and St. Thomas's hospitals we found some of the most valuable results of private foundations, but they did not come down with the names of the founders. He knew no instances in which it was stated who founded St. Bartholomew's hospital, or who founded St. Thomas's hospital—the institutions were not monuments, but buildings for practical purposes. The Prince Consort had shown the propriety of connecting the greatest amount of taste with the greatest amount of public utility; and he thought they waited now for some person to point out how those two could be combined in a memorial to the Prince Consort. They should endeavour to find out a way not only of pointing out the loss of the individual, but also of showing the great benefit they had derived from his life. He proposed a vote of thanks to Mr. Druce for his admirable paper.

Mr. SPIERS seconded the motion, and, in so doing, remarked that as a memorial to the late Prince Consort it would be more appropriate to have a large building, such as a new National Gallery, than simply a statue.

Mr. RIDGE thought there should be an architectural competition for a memorial to the late Prince Consort. He thought the proposed monument should be something of an unselfish character, so that it should not be said they had built a hospital or anything of that kind, but that they had erected a monument purely out of love to the Prince Consort, and not from any other motives whatever.

The CHAIRMAN thought that the two things a monument ought to bear were, the name of the deceased, and, if possible, his personal appearance. A monument in which the name of the deceased was forgotten, ceased to be a monument at all. As to the two hospitals which had been referred to by Mr. Rickman they had ceased to exist as monuments or mementos of individuals, if they were founded by private individuals. He considered the first office of a monument was to represent some individual, his name, his person, and his deeds, if there were space for it. The first duty, it seemed to him, was wherever practicable to have an effigy, then a series of bassi-relievi, illustrative of historical events in which the deceased took an interest, or of events more immediately connected with the individual. It also seemed to him that hospitals, foundations, and various other charities which had been spoken of were liable to be perverted, so far as the names of the founders were concerned, and many of the colleges of this country did not bear the names of the founders. He was sorry to differ from those who held the utilitarian view in regard to memorials. The commemoration of so great a man as the Prince Consort, in reference to a national monument, should be the great object, without the association with it of the cure of disease or the setting of broken limbs. One modern form of monuments had escaped the notice of the lecturer, that of memorial churches. It remained to be seen what would be their success, but he was afraid they would be open to the objection of hospitals and other foundations. One of the most appropriate modes of having a monument or memorial was a column for a statue, such as that at Brussels, and the *Colonne de Juillet*, at Paris. Perhaps the finest combination of architecture and sculpture attempted in this country was exemplified in the Scott monument at Edinburgh, where that monument struck him as being singularly successful. Another instance to which he wished to refer was the beautiful column which Mr. Scott had put up in Westminster, one of the most successful of modern works, and one of the few modern works of which London might well be proud. As to monumental brasses, an esteemed member of the Architectural Association, had put up a beautiful monument, which consisted of an incised marble slab instead of brass; it had been erected in a church, and the result was extremely happy, while the expense was comparatively moderate. This was a new style of monument in England, and one which many, perhaps, would prefer to monumental brass, and it was extremely beautiful in its execution.

The vote of thanks to Mr. Druce for his paper was carried by acclamation. Mr. Druce briefly replied, and the meeting separated.

CHURCH, CHAPEL, AND SCHOOL BUILDING.

Leith (N.B.).—New Episcopal Church.—The foundation stone of the new edifice for St. James's Episcopal congregation, Leith, has been laid by the Right Hon. W. E. Gladstone, Chancellor of the Exchequer. For the site the sum of £2,000 has been paid, and it is estimated that the church will cost between £5,000 and £6,000. The designs, which include a church seated for fully six hundred persons, and a parsonage, are by Mr. Gilbert Scott. The church consists of a nave of five bays, with north and south aisles extending from the east gable westward two bays, a chancel with semicircular apse, and a tower and spire. The nave and aisles are seated for the congregation; the chancel is seated with stalls for the choir; and the apse is occupied by the altar and reredos, and seats for the clergy. On the ground floor of the tower is the vestry, which has a private entrance. In the upper part of the tower is a bell-room, surmounted by an octagonal spire pierced with slender lights protected by projecting gables carried on shafts. The whole of the church is covered in with an open timber roof; that of the nave is boarded on the under side of the braces and ties to a polygonal form; and the chancel, apse, and aisles to the form of a pointed arch. There are two entrances—one in the west gable, the other in the south transept. The west door is surmounted by three two-light windows, the heads filled with plate tracery; in the apex of the gable is a vesica window. The windows of nave and aisles have three lights and in the apse and chancel are single-light pointed windows, the jambs and arches moulded. It is understood that the windows in the west gable will be filled with stained glass, by Messrs. Clayton and Bell. The extreme length of the church inside is 125 feet; the breadth of nave 37 feet 6 inches; of aisles 14 feet. The height of the tower and spire, 180 feet. The style adopted is that of the thirteenth century. Messrs. Berry, of Edinburgh, are the contractors for the mason-work, Mr. Swann, of the Edinburgh Saw-Mills, has the carpenter-work.

Edinburgh.—St. Mary's Church.—This structure has just been opened for service. The edifice was built from a design by Mr. J. T. Rothead, of Glasgow. In style it is what may be termed mixed Perpendicular of the time of Henry VII. The principal entrance, over which is a tall tower and spire, is in Albany-street. The exterior exhibits some fine work, with here and there perhaps an excess of detail, especially in the spire, which loses somewhat of its artistic character when viewed from a distance. The interior is seated for nearly 1,000 persons.

Ely Cathedral.—The Very Rev. Dr. Harvey Goodwin, Dean of Ely, has printed, for circulation among his friends, a brief account of the state of the restorations going on in his cathedral for the last three years. The painting of the ceiling of the nave, which was begun five years ago, by Mr. S. L'Estrange, is now half finished. The scaffolding has been removed, and the "Creation," the "Fall," the "Sacrifice of Noah," the "Sacrifice of Abraham," "Jacob's Ladder," and the "Marriage of Ruth," may now be seen in their finished state. The work will be resumed in the spring. To secure these valuable paintings from injury the roof has been released. Six stained glass windows and 17 carved panels for the choir stalls have been contributed by private persons. A monument in the form of an altar-tomb, of alabaster and serpentine, has been erected at the back of the reredos in memory of the Rev. Dr. Mill, who is represented in a recumbent position on the top. A complete system of lightning conductors protects the building. On the north side the dean and chapter are erecting buildings for the better accommodation of the choristers' school. The amount already subscribed for the restoration of the lantern has reached £3,670, including £1,000 from the Dean and Chapter.

Whittington, Derbyshire.—The foundation-stone of the new parish church was laid on the 1st instant. At the ceremony a leaden case containing several local papers and coins of the realm, with particulars relating to the ceremony, &c., written on parchment, was deposited under the stone, which was laid at the north-east corner of the tower. The proposed church will accommodate 600 persons, and will consist of nave, north and south aisles, chancel, organ chamber and vestry, with entrance lobby in tower at the west end of south aisle. The tower is to be surmounted with a broach spire about 100 feet in high. It will be built of stone obtained in the neighbourhood, faced with Wingerworth stone in six courses, the color of the latter being of a green tint; the dressings will be of a white stone. The style adopted is Geometrical Gothic. The works are being carried out by Mr. J. W. Thompson, bolder, Derby, from a design selected in competition by Messrs. Giles and Brookhouse, of Derby, architects.

CHAPELS.

Chapel for the North Wales Lunatic Asylum.—This chapel is just completed. Rather more than a year ago, architects were invited to send in designs; the one selected, and erected, is of the fourteenth-century Gothic, octagonal on plan, with two projections from the east and west sides; the former for chancel, the latter for porch-vestry, and the staircase, which leads to a small gallery over, for the different officers of the institution. Seats are provided for 200. The roof is supported by eight curved timber ribs springing from moulded corbels in each of the angles, and meeting in the centre, from which hangs a pendant; above, and crowning the composition, is an octagonal bell-cot, with spiral roof and iron foliated cross. The whole of the timber is wrought, stained, and varnished. The architect's estimate was £530, for which amount the building has been entirely completed. The contractors were Messrs. Lloyd and Roberts, Holywell, Flint. Sir Watkyn Williams Wynne gave £50 for a painted glass window in the chancel. The artist employed was Ballantine, of Edinburgh.

Cemetery Chapels, Bristol.—The new cemetery for the parishes of Lyncombe, Widcombe, and St. James has just been consecrated. It is situated on the Bristol-road. There is an entrance lodge at the gates; the two chapels in the centre of the ground are precisely similar externally, and are connected by a cloister, forming a distinct *porte cochere* to each entrance, between which is an arch supporting the bell-turret common to each building. The belfry is surmounted by a spire, rising to about 100 feet, crowned at its apex by a cross. Each chapel is built in the form of a cross. The unconsecrated chapel is fitted up with a tribune at the extreme end for the minister, with fittings on either side, with a robing-room in one transept, and special seats for the chief mourners in the other, both being raised off from the chapel by carved screens. The consecrated chapel, of the same plan, is divided into a chancel and nave; the east end, or apse, is paved with encaustic tiles. At the extreme end is a plain communion table, and on the north and south sides are lecterns for the officiating clergymen. The remainder of the building is arranged as the other chapel. The style of the edifice is that of the reign of Edward III. Mr. C. E. Davis is the architect, and Mr. D. Aust, the builder. The carving of the stonework has been executed by Mr. G. Porter, of Bristol.

SCHOOLS.

Liverpool.—Kirkdale Schools.—The new industrial schools and free school-room church for the district of Kirkdale, which have recently been erected, were opened last week. It is intended that the new building shall not only be used as an industrial ragged school, where children of the very lowest class of the population shall receive the usual elementary instruction, but where boys shall also be taught the rudiments of some useful occupation for their after life. This object has been strictly kept in view in the design and construction of the building; but it is also intended that on Sundays it shall be used as a free school-room church, where there will be divine service and free accommodation for a large number of the adult working population of the neighbourhood. The building stands upon an oblong piece of land fronted by Kirkdale-road. The exterior is of plain brick and stone. The basement floor is planned as a cooking kitchen, which can be used for a soup kitchen during the winter months, and has a separate entrance from Major-street. Adjoining this kitchen is a flagged space, intended as a play-room during wet weather, or for workshops when required. The main entrance to the ground floor is from Major-street, to a schoolroom 80 feet long, 25 feet 6 inches wide, and 18 feet wide, intended also to be used as a free church for the poor of the district. From this room there are a class-room, large workshop, and a store-room, covered lavatories, &c., and a large play-yard. The upper floor, which corresponds with the ground floor, and which has also a separate entrance from Major-street, is intended for a girls' schoolroom, class-room, printing shop, and large workshop. The buildings and yard walls occupy an area of about 1,300 square yards, and the entire cost has been £3,000.

Dorset.—Puddletinton New School.—The ceremony of opening this school took place on New Year's day. The old school house was a dilapidated old tenement, but now a group of buildings has been raised close to the church, consisting of a schoolroom 33 feet by 17 feet, lofty and well ventilated, and a convenient residence for the teacher, with parlor, kitchen, scullery, pantry, and three bedrooms, surrounded by about a quarter of an acre of land, affording plenty of space for a playground and garden. The designs were by Mr. J. Hicks, of Dorchester; the work has been executed by Mr. Wellspring, of the same place, the walls being built of flints with brick bands and quoins, the total cost was about £400.

The Nonconformists in Lancashire.—At a meeting of the Lancashire Nonconformists, it was announced that it had been arranged that thirty additional chapels should be erected within the county to celebrate the bi-centenary of the passing of the Act of Uniformity, on the 24th of August, 1802. It was also stated that Mr. Hadfield, the chairman, had agreed to give £3,000 towards the project. Other sums, in the course of the evening, were announced, amounting altogether to £11,150.

St. Giles, Northampton.—On New Year's day the new schools which have been erected for this parish were publicly opened. The buildings form a group, consisting of boys' school, girls' school, infant school, and three class-rooms. The boys' school and infant school are built in the form of the letter T, with one side of the boys' school and one end of the infant school facing the church. The girls' school is at the back of the boys' school, and at right angles to it, with the front facing the south. Each school has a large play-yard and out offices, having no communication with each other. The windows are all of Decorated Gothic character, and have Bath stone dressings. The tower is surmounted by a wooden bell turret. The roofs are high pitched, the timber work being stained and varnished. The principals have curved ribs, resting on stone corbels. Provision is made for ventilation by the introduction of ventilating grates in the outer walls under the floor with ventilating plates in the floors, and a series of triangular windows in the roof. On the front of the tower adjoining the infant school, over the entrance door, is a stone tablet, of the form of the "vesica piscis;" in the centre is a figure of the Saviour in alto-relievo, in the character of the Good Shepherd, supported on an ornamental corbel, with carved foliage. Around the figure are three scrolls, bearing inscriptions. Around these scrolls and the figure, and within the outside border, are cusps, formed in encaustic tile-work, executed by Minton. At one end of the boys' school, over the apparatus closet, is an organ gallery. Mr. E. F. Law is the architect, and Mr. Gosford the builder. The total cost has been £2,018, exclusive of the site and architect's commission.

Salem Chapel, Bowling, near Bradford.—A new chapel and schools have been lately erected at Bowling, near Bradford, for the New Connexion Methodists at a cost of £1,300, from designs by Mr. T. C. Hlope, architect of Bradford. The chapel is 65 feet long, including the semicircular recess for the organ and singers' gallery, behind the minister's platform, 43 feet wide, and 23 feet high from floor to ceiling, and will accommodate 400 persons on the ground floor, there being no gallery. The school behind the chapel is 46 feet long, 18 feet wide, and 14 feet high to the ceiling line. Suitable vestries and class-rooms are provided. The building is in the Italian style. The central gable of the west front projects 3 feet from the main building line, and is surmounted with a belfry. The entrance porch, 13 feet 6 inches by 6 feet, to the chapel projects from the south front, and faces an intended new street. Placed in this situation, it adds materially to the warmth and comfort of the chapel, the situation being elevated and much exposed to the west winds. The ceiling of the chapel is panelled in plaster, a panelled cone running round the chapel springs from a console cornice and joins the flat ceiling at a distance of about 9 feet from the walls. The chapel is warmed with hot air by a very simple, cheap, and effective method. The contractors are Mr. Thomas Peel, mason, Mr. Charles Neal, joiner, Mr. Schofield, plumber, Mr. John Bolton, plasterer, Mr. James Smithies, slater, Mr. Ellis, painter, and Mr. William Rhodes, smith.

W. PORDEN.—The works of this architect were the subject of some inquiry in our sixth volume. We add a note supplied by a writer in the *Athenaeum*, who says:—"When I made Mr. Porden's acquaintance, fifty years ago, he was living in intimate association with Flaxman, Phillips and Bone, Royal Academicians; with Miller, the well-known predecessor of Mr. Murray, and with the elder Mr. D'Irasci; and, if not a great architect, he was sufficiently eminent in his day to have been employed by the late Earl Grosvenor extensively, and by the Prince of Wales, for whom he built the dome, stables, and riding-house at Brighton—a pile (even in its present state) of a very superior character to the fantastic edifice into which the Pavilion itself was afterwards transformed by other hands."

THE NEW BRIDGE AT BLACKFRIARS.

NO information given at page 1000, in our last volume, we may now add, descriptive of Mr. Page's selected design, that the centre arch is 280 feet span (40 feet wider than the centre arch of Southwark-bridge), and the two side arches being each of 220 feet span, the waterway being thus 720 feet, the two piers are each 28 feet in thickness. The springing line of the arches is 2 feet above Trinity high-water mark (the tide having, on extraordinary occasions, risen 3 feet 8 inches above that datum.) The rise of the centre arch above the springing is 24 feet, and of the side arches 20 feet; hence the headway at Trinity high-water will be 26 feet under the centre arch, and 22 feet under the side arches. The arches will be in cast-iron from the piers to within 40 feet of the crown; the centre piece forming the key of the arch, 80 feet in length, being of wrought-iron; so that the thinnest part of the bridge, which is in immediate contiguity with the roadway, and consequently subject to any shocks from the traffic, would be of the more safe material. The same principle has been carried out at Westminster-bridge. All the central parts of each arch, where the wrought-iron ribs are inserted, are to be of wrought-iron. Between the main ribs, cross girders and bearers will be fixed, $\frac{3}{4}$ feet apart, on which are to be laid wrought-iron plates, and over these again a water-tight and elastic bed interposed between the plates and the roadway. The design is simple in character, but of massive proportions. The cornice is relieved by corbels, and the spandrels filled in with the arms of the City of London and those of Southwark, with some sculpture in bas-relief indicative of the Thames, the sculpture however, as before mentioned, is not to be carried out at present. The pedestals on the piers are proposed to be of polished granite; the arches at the ends of sandstone, contrasting in color with the granite. The four pedestals on each side of the bridge, 40 feet in height above high-water mark, and 23 feet in width, would supply bases for groups of sculpture commemorative of past events in our natural history. Those indicated in the drawing are intended to represent King Alfred, Boadicea leading to the charge, Sir William Walworth dealing the death-blow on Wat Tyler, and our present sovereign Queen Victoria encouraging the arts of peace. These groups, placed so as to have a sky outline, would offer to the observer a series of sculpture in a position not often equalled in this country, as they would be separate and distinct from all surrounding objects, and would stand out in bold relief. The foundation of the bridge is proposed to be formed on timber, and iron piles, similar to those of Westminster-bridge; the piers are to be of masonry. The time of construction is stated at two years and a half, and provision is to be made for the traffic without the erection of a temporary bridge, as has been the case at Westminster. Rumors of a probable delay in the commencement of the work are afloat, we hope they are unfounded.

Correspondence.

THE COLOSSEUM AND THE ENGLISH IN ROME.

SIR,—In the report of Mr. Scott's paper I notice that he says,—“One hears a story of an American who, after looking at the new works always going on at the Colosseum, remarked, with very just irony, ‘It’ll be a very fine building when finished.’” Does Mr. Scott, by quoting it, mean to make this “story” his own?

[[Of all European travellers, Americans are likely to be the least exact in their information, as they spend such a short time in any place. I remember being seated at a table d’hôte of an hotel in France next to a Member of Congress; this was in the middle of December, and I was startled to find that my neighbor had been in St. Petersburg in the first week of November, and had travelled over a great part of Europe since that period. He gave himself two or three days in Florence, and described his *modus operandi* thus:—“The first day I hire a carriage and drive through the city” so as to get an idea of the exterior of the principal buildings, and of the general aspect of the place. The second I devote to seeing the interiors, and generally get done on that day, if not, I take—but this is very seldom—a third.” What recollections can be carried away by a man who lives in such a constant whirl?

Perhaps some of your readers have been in Rome recently, and may be induced to notice the subject. I can speak confidently as to the state of the Colosseum in the winter of 1857-58. It had then no appearance of being likely to require any repair for a considerable time. There were no “new works going on.” The Pope has, I dare say, no friends, and the Papal Government is a fair mark for every one's little pellet; but I could fain wish that we had in this country such judicious conservators of antiquities as are to be found in Rome. What Canina did in his lifetime we know. True the bolstering buttress which props standing ring of the Colosseum is ugly, but it has at least the merit of showing itself the most clearly a *modern reparation*. So of the arch of Titus; a child may see which is the really old work and which is the modern. No imitative patching or piecing, but an honest unpretending stoppage of further decay. Can we say anything like this of our own country? When we begin to pull a cathedral about it is apt to come down with a run, and then we have to *restore* it.

The public works achieved during the Pontificate of Pius IX. are not to be despised. The magnificent viaduct between Albano and Laticia may challenge comparison with any in Europe. Explorations, I admit, progress slowly; but why? Because the Papal Government is poor. Let us not forget to acknowledge what priceless treasures have been taken of late years, in spite of every outward discouragement, from the catacombs, and displayed to the public at the Vatican and the Lateran.

I have no desire to be an apologist for the Pope in either his spiritual or his temporal capacity. Mainly dependent on the miserable lotto, a tax on tobacco and on an oppressive passport system, with no commerce, and little trade or manufacture, the Papal revenue must be scanty indeed. If the rulers suffer, how much more the governed? I can quite believe that the Romans groan under ecclesiastical tyranny and fiscal oppression. The same letters which recount the deplorable state of Rome report that never were the English parties so frequent and so gay as at this moment. Those most respectable looking *cocchieri* on the Piazza di Spagna are in great demand, and their demands are, doubtless, in proportion. The mosaic and cameo workers of the Croce, Condotti, and Babuino are in full employment. Count de Goyon parades his army—horse, foot, and guns—along the Corso, and out on the Flaminian Way, over the Ponte Molle, to review. The French trumpeters practice on the Via di S. Sebastiano, and drill goes on outside the Colosseum. Everything much in its normal condition.

We at home cannot understand how continental towns contrive to exist on such meagre newspapers. The *Giornale di Roma*, a sheet of four pages a little larger than those of the BUILDING NEWS, is all that the Romans have to go to for information, and this is mostly taken up with official intelligence and the movements of *Sua Santità*. The local news acquired by the English is principally derived from chit-chat with one another. They see the *Times*, *Galignani*, *Illustrated London News*, &c., at Piale's and Mondini's, and they care and know little more about the Romans than we in town. The natives keep away from the great ceremonies of the church, and appear systematically to yield possession to us and other foreigners. The only exceptions are the “happy peasants,” picturesquely attired, but encrusted with dirt and reeking with garlic. The English visit almost exclusively amongst themselves, and, as a rule, know the language very imperfectly. Alien

* An American always says “city” when we use the word “town,” and he lays the accent on the first syllable of “Italian.” By these peculiarities you can detect his country even if he has no occasion to “reckon.”

in religion and insular in manners, they are little calculated, even if they desired, to gain confidence, or get correct impressions of the people amidst whom they live. How should they? The classes with which they are chiefly brought in contact are hotel proprietors, lacqueys, coachmen, and shopkeepers—persons who are always on the look out for pawns and francs, whose civility is a very purchasable commodity, and whose rule of life is to make hay while the sun shines, i.e., when the English come.

Whenever our dear countrymen dilate on the feelings and wishes of the population, let us politely listen. Be it English gossip or American “story,” let us receive each *cum grano*.

January 21.

C. J.

SUGGESTED ROAD ACROSS HYDE-PARK.

SIR,—Mr. Harry R. Newton claims in your last Number to be the original proposer of an open sunk road across the Park, but we must beg leave to make a few remarks on the subject as the original proposers of the movement of 1861.

There can be no doubt that ever since London has extended itself to any considerable degree on both sides of Hyde-park, the subject of a road across has inevitably forced itself upon the attention of the public, or at least of various individuals. If it were worth the trouble of research, it would probably be easy to show that for twenty, thirty, or even forty years suggestions at various dates have been published. It would not be at all singular, if among many schemes several should be found to be nearly identical, although unknown to the respective originators. Whatever is unique or peculiar in Mr. Newton's plan, we should be the last to depreciate; we wish only to say that it has been suggested, as a whole, though *mutatis mutandis*, by several other persons at different times. For ourselves we claim to have originated the movement which is now in progress at this day, and which commenced by our contributing a short article to a weekly journal last summer, advocating the identical line of route set forth by Mr. Newton, though without our being aware, as the subject was then new to us, of there being any such plan in existence either by him or by Captain Powke, as per model at the Brompton Museum some years, or by any other person. We followed up the affair by articles in the local papers, *Notting-hill Times* of 31st August, *Bayswater Chronicle*, &c., and we got up a requisition to the Churchwardens of Paddington (signed by influential parishioners) for holding the public meeting which took place on 26th November last; in fact, to promote the movement took up a considerable portion of our daily time, unremunerated, during three months. To Colonel Worthly, the much respected churchwarden of Paddington, who is well known for his zeal in many philanthropic and public movements, we are greatly indebted for his countenance and energetic assistance, as well for valuable advice in the conduct of the business.

We have now only to hope that, as Government has given consent for the road, the opportunity will not be lost for want of pecuniary support, which is the only remaining impediment, but that the surrounding parishes, the Metropolitan Board of Works, &c., will join in contributing the small sum each which is requisite to make up the £20,000 or £30,000 necessary for the purpose. It is to be feared that by the unweariness of these bodies all the recent trouble and public agitation may be entirely lost.

As a last resort, it would be very desirable to have even a temporary roadway opened during the Exhibition; but it would be immeasurably preferable to secure a permanent route at once.

H. AND R. POWELL.

Bayswater, 22nd January, 1862.

TENDERS.

CHAPEL, ABINGDON.

For the new Independent Chapel, Abingdon, for Rev. S. Lepine. Mr. James S. Dodd, architect. Quantities supplied by Mr. Albert W. Dodd.	
Hallam and Co.	£2,100 0
Wall and Hook	1,942 0
Chesterman	1,929 0
Ellis	1,875 0
Todd	1,788 0
Bower	1,786 4
Thomas	1,770 0
Architect's Estimate.....	£1,800

HOUSES AND SHOPS, WOOLWICH.

For erecting and completely finishing twelve houses, four of which are shops, situated near the Dockyard Railway Station, Woolwich, for Mr. William Jackson. Mr. William Gosling, architect.

Joseph R. Lidbetter..... £3,200.

SCHOOLS, KENTISH-TOWN.

For the Gospel Oak Schools, Kentish-town. Mr. Thomas M. Rickman, architect. Quantities supplied by Mr. Cates.	
Brass.....	£3,880
Myers	3,738
Sanders	3,721
Browne and Robinson.....	3,657
Dove	3,525
Jackson and Shaw.....	£3,482
Batterbury	3,319
Sharlington and Cole	3,177
Macers	3,133

WAREHOUSES, LONDON.

For erecting and finishing seven warehouses, in Newgate-street and King Edward-street, City, for Messrs. Fandel and Phillips. Messrs. Tiltott and Chamberlain, architects. Quantities supplied.

Cubitt and Co.	£11,643
Holland and Hannen.....	10,670
Clemance	10,450
Pritchard and Shelton	10,414
Lucas Brothers	10,400
Ashby and Sons	10,288
Wills	£10,189
Hill, Keddell, and Co.....	9,989
Myers and Sons	9,965
Nicholson and Son	9,925
Laurence and Sons.....	9,920
Piper and Wheeler* (accepted)	9,920

* The two lowest tenders being the same amount, the matter was arranged by the parties interested drawing for the same.

BARRACKS, &c., WARWICK.

For militia barracks and additions to Court House at Warwick. Mr. William Kenhall, architect. Quantities supplied to Mr. Dunkley by Mr. D. J. Brewin.

Sawyer	£8,876
Brigg	8,590
Dutton	8,500
Chambers and Hilton	8,639
Green	7,697
Hart	7,425
Marriott	£7,500
Clark and Son	7,390
Clark	7,353
J. and C. W. Todd	7,144
Fox Brothers	7,140
Dunkley	7,019

COMPETITIONS OPEN.

BRIDGE.

BRISBANE RIVER.—The Municipality of Brisbane are prepared to receive designs and tenders for the construction of a bridge over the Brisbane river, at Brisbane, the capital of Queensland. The author of the best design, at the lowest cost, will receive a reward of £150, or be employed to carry the work out, providing he furnishes sufficient proof of his competency and experience in similar undertakings. A premium of £80 will be awarded to the next best design, and £40 for the next best. The plans, specifications, and estimates of the first and second designs will be retained by the Corporation as their property. The remainder will be returned to the competitors; but the corporation will incur no responsibility as to their safe delivery. Each set of drawings, and the documents accompanying them, are to be distinguished by a motto only, and accompanied by a letter in a sealed envelope, marked with the same motto, and containing the author's name and address, and such testimonials as he may think proper to furnish. Professional

judges, being non-competitors, will be appointed by the Corporation to determine the merits of the respective designs. Eligible tenders for the work, accompanying the design, will be entertained. All drawings and tenders to be delivered at Gresham House, on or before the 15th of March next. Copies of the instructions to competitors, and the plan of the city, can be obtained of F. Mangles and Co., the Colonial agents, and agents to the Municipality of Queensland, 86 to 88, Gresham House, Old Broad-street, London, E.C.

PIER.

BLACKPOOL.—Plans, specifications, and approximate cost of a pier for Blackpool, are required. The Provisional Directors offer a premium of thirty guineas for the design that shall be adopted. Printed conditions, levels, and other information may be had on application to the Provisional Secretary, E. Blane, Blackpool. Plans, &c., to Feb. 8.

CHURCHES.

BICESTER.—Plans and estimates are wanted of the work required in the restoration of Bloester Parish Church. Particulars, and amount to be expended, can be obtained of the Rev. J. W. Watts, the Vicarage; or of the Hon. Secretary, Charles Fowler, White-lands, Bicester.

CONTRACTS OPEN.

BANK.

NOTTS.—For the erection of a bank at Onndle, Northamptonshire, for the Stamford, Spalding, and Boston Banking Company. Particulars from Mr. William Eve, surveyor, 8, Union-court, Old Broad-street, E.C. Tenders on or before the 7th of Feb.

PRIORY.

HEREFORDSHIRE.—For the erection and completion of a new residence and offices, for B. Haigh Allan, Esq., at Clifford Priory, Herefordshire, within two miles of the market town of Hay. Plans, &c., with Stevens and Robinson, architects, 17, Tenant-street, Derby, to whom tenders (according to form) on or before the 1st Feb.

MANSION.

HANTS.—For making certain additions to a mansion at Horndean. Hants. Plans, &c., at Mr. Glasse's, Post-office, Horndean. Tenders to be delivered at the office of the architect, Mr. John Colsoe, St. Swithin's-street, Winchester, on or before the 1st Feb.

BATH-ROOM, &c.

TENBURY WELLS.—For the erection of a bath-room, pump-room, and cottage, at Tenbury, for the Tenbury Wells Improvement Company, Limited. Drawings, &c., at the office of Mr. Norris, solicitor, Tenbury; and further particulars of Mr. James Cranston, architect, 1, Temple-row West, Birmingham; or of Mr. Robert Robinson, Tenbury, Secretary to the Company. Tenders to be sent in to Robert Robinson, Secretary, sealed and endorsed "Tenders for Bath and Pump-room, &c.," on or before the 3rd February.

ALMSHOUSES.

LINCOLNSHIRE.—For the erection of almshouses for the Trustees of George Dawson's Charity, at Gelston, on land situate in Little Gonerby, in the parish of Grantham. Plans, &c., at the office of Mr. Edward Browning, architect, Broad-street, Stamford. Tenders, with the names of two responsible persons as sureties for the due performance of the contract, in case they should be required by the Court of Chancery, and addressed to the Trustees of Dawson's Charity, to be delivered at the Vicarage Grantham, on or before the 1st of February.

RAILWAY STATION &c.

LONDON AND NORTH WESTERN.—For a new passenger station and waiting shed at Mumps Station, Oldham; also a new cotton warehouse at the same place. Plans, &c., at the engineer's office, Lime-street Station, Liverpool. Sealed tenders to be addressed to Mr. William Long, Secretary's Office, Euston Station, London, not later than January 28.

GAOL.

MONAGHAN.—For the alterations and additions to Monaghan Gaol. Plans, &c., to the 2nd of February next, at the gaol, and at the office of the architect, Mr. John McCuddy, 24, Westland-row, Dublin. Sealed tenders to be delivered at the gaol, before 3rd of February.

DWELLING-HOUSES.

DUMFRIES (N. B.).—For the mason, joiner, and other works required to erect and complete the following buildings on the Estate of East Tinwald, for M. Carthew Yorston, Esq.:—1. A dwelling-house and steading of offices on the Farm of Fernyleuch. 2. Two cottages on the Farm of Bruntshields. 3. A dwelling-house and steading of offices on the Farm of Bruntshields. Plans, &c., with James Barbour, architect, Dumfries, to whom tenders on or before January 28th.

SOUTHAMPTON.—For the erection of two houses, &c., on the Belvedere Estate, Southampton, for Mr. John Smith, chemist. Drawings, &c., with Mr. W. Hives, architect, &c., of Portland-street. Sealed tenders (addressed to Mr. Smith) are to be delivered at Mr. Hives's offices, on or before the 8th February.

LODGE.

ESSEX.—For the rebuilding of the principal portion of Witham Lodge, in the county of Essex. Plans, &c., with Mr. Fred. Chancellor, architect, &c., Chelmsford, Essex, and 25, Old Broad-street, London. Quantities will be supplied to those builders who make application for same previous to the 31st inst. Tenders to be delivered to the architect, at Chelmsford, on or before the 7th February.

CHURCHES.

CHESHIRE.—For the works to be done in a new church at present in course of erection at Waterfoot, near Newchurch, Rossendale. Plans, &c., at the Duke of Buccleugh Inn, Waterfoot, on application to the Rev. R. Smith, Glen House, near Newchurch Station. Tenders to be delivered to James Crabtree, Esq., Newchurch, on or before 10th February, 1862.

IRELAND.—For enlarging the church of Killybegs, county Donegal, and for repairing the church of St. Peter's, City of Cork. Plans, &c., with the resident ministers. Tenders to be forwarded sealed, prepaid, and addressed thus: "Proposal for —, the Church of —, The Ecclesiastical Commissioners for Ireland, Dublin," by January 30.

CHAPELS.

YORKSHIRE.—For the various works required in the erection of two chapels, asperin tendent's house, entrances gates, and iron railing, for the Burial Board for the townships of Whitby and Ruward, in the North Riding of the County of York. Drawings, &c., with Stephenson and Son, and John Buchanan, clerks to the said Board, Whitby. Further information from the architects, Messrs. Pritchett and Son, York, or Darlington. Tenders, sealed and endorsed, will be received by the clerks on or before the 29th inst.

CEMETERY WORKS.

PETERBOROUGH.—For cast-iron palisades for the Peterborough Cemetery, 4½ feet high, with two double-gates of the width of 10 feet at the entrance, and two side gates, 4 feet wide each, with locks and bolts complete, including fixing in the stone, pillars, and coping (which will be erected by the Commissioners), and two coats of red-lead and two coats of paint, of approved color. Sealed tenders, with drawings of the palisades and gates, and the names and addresses of two sureties for the performance of the contract, to be sent to Nelson Wilkinson, clerk to the Commissioners, on or before the 2nd of February. Further particulars may be obtained of Mr. Ruddle, at his office in Newtown, Peterborough.

BRIDGE.

LANCASTER.—For taking down, enlarging, and rebuilding Agcroft Bridge, in the townships of Pendlebury and Prestwick. The new bridge will be built of stone, and will have three arches, the centre span being 45 feet, and the side arches 38 feet each. The width will be 30 feet. The bridge is about three miles north of Manchester, and 600 yards from the Agcroft Wharf of the Manchester and Bolton Canal. Plans, &c., at the Bridgemaster's Office, 41, John Dalton-street, Manchester. Sealed Tenders (of which proper forms will be sent) must be sent to W. Radford, bridgemaster, before the 30th inst., endorsed "Tender for Agcroft Bridge."

DOCKS.

WORKINGTON.—For the construction of a wet dock for the Right Hon. the Earl of Lonsdale, at Workington, Cumberland. Specifications, &c., at the offices of Messrs. Lumb and Howson, solicitors, Whitehaven; or of Mr. A. M. Rendel, C.E., 8, Great George-

street, Westminster. Sealed tenders, endorsed, "Tender for Workington Dock," Messrs. Lumb and Howson, Solicitors, Whitehaven, on or before the 28th January.

SUPPLY.

LIVERPOOL.—For the supply to the Mersey Docks and Harbor Board of good common Baltic timber, in such quantities and dimensions as are herein specified, viz.:—9,000 cubic feet, in lengths of 42 to 45 feet, and 12 to 14 inches quarter girth; 4,000 cubic feet, in lengths of 16 to 22 feet (average to be not less than 20 feet), and 12 to 14 inches quarter girth; 11,000 cubic feet, in lengths of 12 to 16 feet (average to be not less than 14 feet), and 12 to 14 inches quarter girth; or, 24,000 cubic feet in all. The whole to be free from defects of any kind, and to be delivered (free of all charges for carriage, &c.) not later than the 15th June, on the quay of the Morpeth Dock, at Birkenhead. Tenders, sealed and endorsed "Tender for Baltic Timber," addressed to the Chairman of the Committee of Works, to be sent in to the Dock Office, Liverpool, not later than 10 a.m. on the 5th February.

SEWERS.

Bristol.—For the construction of sewers, and forming roads at Earl's-meads, near New-foundland-street, for the Corporation of Bristol. Drawings, &c., at the offices of Messrs. Popes and Bindon, architects, Guildhall-chambers, Bristol. Tenders to be delivered at the Treasurer's Office, Council-house, on or before twelve noon, February 1.

MILITARY STOREHOUSE.

YORKSHIRE.—For building a storehouse at Scarborough for the United Corps of Militia Artillery, East and North Yorkshire. Plans, &c., at the Adjutant's Office, No. 19, Mulgrave-terrace, Scarborough; at the offices of Messrs. Leeman and Clark, in York; and at the office of Mr. Trevor, in Northallerton. Sealed tenders, addressed to "The Chairman of the Committee, and marked 'Tender for Militia Storehouse, &c.," to the Adjutant's Office, in Scarborough, not later than Tuesday, February 18.

BRITISH AND FRENCH RAILWAYS.—The *Engineer* has prepared from the latest returns a statement of the length and cost of railways in all the countries of the world. The following relates to British and French railways:—*Great Britain and Ireland.*—On the 31st December, 1860, the length of railways open and in use in the United Kingdom was 10,433 miles. The total amount of capital raised for their construction, and including that raised for lines then in progress, was £348,130,327. During the past year upwards of 300 miles of new line have been opened; so that the total present length of British railways cannot be far from 10,750 miles, nor their cost less than £355,000,000. The total traffic receipts for 1860 amounted to £27,766,622, and working expenses to £13,187,308, or to 47 per cent. of the receipts. 103,435,678 passengers were carried, besides 60,386,780 tons of minerals, and 29,470,931 tons of general merchandise. The train mileage for the year was 102,243,692 miles run. The working stock consisted of 5,801 locomotives, 15,076 passenger carriages, and 180,574 waggons. Of the 10,433 miles of railway open, there were 7,583 miles in England and Wales, 1,486 miles in Scotland, and 1,364 miles in Ireland. *France.*—At the end of 1860 the Minister of Agriculture, Commerce, and Public Works, reported the length of railways open as 5,778 miles, their cost having been £184,440,000, of which £32,440,000 had been contributed by the State, and £152,000,000 by companies. The gross receipts for 1860 were £16,328,540. 430 miles were set down for completion in 1861. At the end of September last the whole length of line opened was 6,147 miles, of which 4,347 miles belonged to the old, and 1,800 miles to the new *reseau*. The receipts for nine months had been £13,543,402, or at the rate of £17,797,949 per annum. The new *reseau*, now in course of execution, is to include 5,318 miles, at an estimated cost of £123,400,000, or £23,200 per mile. An expenditure of £14,000,000 was authorised last year. The lines of the Bourbonnais, 420 miles in extent, are reported to be nearly complete. The lines open in France on the 1st of January, 1858, were worked by 2,624 locomotives, and at the present time the number in use, doubtless, exceeds 3,000.

NOTICE.

Owing to an accident which occurred last week at the moment of going to press, an error appears on the title-page issued with our index. Subscribers are requested to cancel the page in favor of that given with the present Number.

The seventh volume of the BUILDING NEWS is now ready, bound in cloth, price 21s. Subscribers can have their copies bound, either with or without the advertisement pages, for 4s. 6d., on sending them to the office. Cases ready for binding the volume may be had price 2s. each.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favor us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

Q.—Thanks.

W. B. N. (Stamford).—Next week.

W. B. (Hull).—Thanks.

T. C. S.—Not of sufficient importance; thank's, nevertheless.

M. F.—Plans have appeared, view will be given. "The Chambers' Supplement" will be completed as soon as the remainder of the work can be prepared, see notice in our Number for the 10th inst.

R. A. G. (Dublin).—We really do not know of any work "best suited for an architect who perfectly understands perspective, but not having practised it has lost the opportunity of becoming acquainted with the most approved and latest method." We have not heard of any "recent improvements." We should recommend a little practice.

W. M. (Pitfield-wharf).—We believe an answer has been given.

F. L. (Northampton).—Received.

J. H.—Much obliged.

A BUILDER'S CLERK.—She'll receive attention.

H. B.—We often receive such complaints; write to the Secretary.

ANTI-STRIKE.—Yes, if not otherwise objectionable.

N.—In type.

A. S. ANTIANTH OF ISLINGTON.—In type.

A. AND W.—We shall be glad to receive tracings; proof shall be sent.

F. A.—Declined.

C.—Ditto.

M. J. B. A.—Yes.

R. E. R.—We cannot say.

THE ACQUITT.—Particulars have not been received.

MESSRS. K. AND B.—We shall return to the subject at the proper time.

CANBERRILL.—Make an application to the Board of Works, Spring-gardens.

A. Z.—Below our mark.

A LONDON SURVEYOR.—"Decisions in the Courts," are sometimes deferred for want of space.

MR. JAMISON.—Letter has been forwarded.


P. O.—It is thanked for good opinion, but we cannot name the writer. It is contrary to rule.

W. B.—Shall appear.

W. S. (Nottingham).—Next week. Is name to appear?

* * * All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old Bowtell-court, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 18 to 21, Old Bowtell-court. Advertisements received up to six o'clock on Thursdays.

HISTORIES IN STONES.



R. SCOTT'S admirable lecture at the Institute—admirable in style and matter—comes most appositely when the public mind is gradually awakening to the importance of preserving architectural monuments, on the score of their being "Books of History," enduring records of the different phases of civilisation, and faithful illustrations of the progress of the art and science of construction. Years ago the late Mr. Hudson Turner, as he stated in the preface to his "Account of Domestic Architecture in England," was led to believe "that our national records might be made available to illustrate the history of architecture in England. Strongly impressed with this opinion he began, sixteen (alas! now twenty-seven) years ago, to note down every fact bearing on the subject which offered in the course of daily reference to those records for professional objects." What Mr. Scott proposes is the converse, and he sets before us the value "of the monuments and remains by which our history and civilisation are illustrated." The history of peoples cannot be compiled from written records alone, not only because those of early periods do not exist, but because there were an infinity of illustrations

which escaped the observation of annalists, or which are thought too common-place to be noted down.

Take, for instance, the invention of chimneys. It is certainly a marking point in the history of civilisation, and an indication of progress in the comfort and well being of the community. Yet are we ignorant of the name of the inventor, and, indeed, of the century, in which his contrivance was first given to the world. It did not come into general use until the fifteenth century, although Muratori states, in his *Antiquitates Italicae medii ævi*, written in the first half of the last century, that in about the middle of the fourteenth century (1368) a Prince of Padua took chimney builders with him to Rome to build one in the hotel he put up at, because the inhabitants of the Eternal City did not use chimneys, or, according to Muratori, had forgotten their use during the intellectual eclipse which followed the irruption of the Goths. But architectural research has discovered undeniable evidence of the existence of chimneys in English structures, dating so far back as the twelfth century, although Leland speaks of the chimneys at Bolton Castle as a novelty: "One thing I much notyd in the haull of Bolton, how chimneys were conveyed by tunnells mayd in the syds of the wauls, betwixt the lights in the haull; and by this meanes and by no covers, is the smoke of the harthe in the haull wonder-strangely conveyed."

Bamburgh Castle, which, together with Coningsburgh Castle, was thought by Sir Walter Scott and Mr. King to be of Saxon architecture, exhibits a different habit of life from what existed at Bolton. It is not, however, of Saxon, but of Norman architecture, and was built in the twelfth century. The stones employed in building the Keep are unusually small, and the mortar with which they were cemented together contains small pieces of shells and charcoal, authorising the conclusion that the lime employed was obtained by calcining with wood marine shells, obtained from the seashore. The walls on one side—the front—are 11 feet thick, and on the other three sides 9 feet thick. They appear to have been built by means of scaffolding up to the first stay, to where the fillings in on the inside are mixed with whinstone, obtained from leveling the rock beneath for the foundations of the castle to stand upon. Higher up there are no fillings in of whinstone, leaving us to infer that the walls were continued without the aid of scaffolding. The roof originally rested on the second story, but was afterwards raised. No traces of flues are visible; but in what is supposed to have been the guard-room, the stones in the centre of the floor are burned red, indicating the locality of the fireplace. Near the top there was an opening, 3 feet square, for the smoke to escape. In all the other rooms the windows were mere loop-holes, 5 inches wide, except in the gables of the roof, where the windows in each were a foot wide. The outworks are built of a different material—coarse sandstone—and in all the principal rooms there are huge chimneys, particularly in the kitchen. Thus, not only does the keep of Bamburgh differ from that of Bolton, but it also differs from its outbuildings. Dr. Stukely, in his "Itinerarium Curiosum," describes all that remained entire of Glastonbury Abbey—the kitchen—as "a judicious piece of architecture." Formed from an octagon, included in a square; four fireplaces fill the four angles, having chimneys over them in the flat part of the roof; between these rises the arched octagonal pyramid, crowned with a double lantern, one within another; there are eight curved ribs within, which support the vault, and eight funnels for letting out the steam through the windows."

The remains of ancient constructions are, in some cases, all that we have to indicate positively the existence of races now extinct, or absorbed by the successive waves of population that flowed over the lands they inhabited. A few stones rudely built up are the sole indications we possess of the peoples who inhabited Greece before the Pelasgic era, and in the various remains of what is called Cyclopean architecture scattered over Asia

is the only evidence left of their being a mighty race of builders whom we call à tort et à travers Phœnicians. No one can have stood in the presence of Baalbec, and surveyed the platform of huge stones on which the ruined temples were built, without feeling convinced that we have lost the history of a people and of a civilisation replete with instruction. Nor can we but feel struck by the difference between the habits of thought and standards of excellence exhibited by the works of the builders of the Cyclopean masonry of Baalbec and of the pebble walls at Bamburgh. Who were the builders of these Cyclopean structures? Who were the men that quarried stones 70 feet long, 14 feet on each side, weighing 1,200 tons, and built them up into a platform rising 20 feet above the level of the ground? They are unknown; the century in which they existed is a mystery; even their name and race have passed from the memory of the world, and all that we can do is to presume, from the bevels of the stones, that the builders were of the Phœnician family, and that the "City of Baal" was built during the "palmy days of Phœnician history;" but almost any other presumption would be entitled to just as much credit. The buried cities of Mexico reveal the existence of a people who had passed away long before the traditions of the victims of Spanish enterprise commenced. Seeing these things, we may safely conclude that the preservation of ancient structures is of high historical importance, and is a duty incumbent upon us, not only for our own instruction, but for those who may come after us. For it is not unreasonable to suppose that as, from a few faint indications, Champollion was enabled to form into a regular language what appeared to be quaint barbaric ornaments, and Owen to construct the anatomy of a bird from its thigh-bone, so hereafter some one may arise who, from the hitherto neglected ruins of structures, will be enabled to construct the history of pre-historic peoples, and trace the influence on our civilisation of races of whom we know nothing.

To preserve what has escaped the neglect, rapacity, and restoring processes of our predecessors, and the destructive influences of our climate, Mr. Scott suggested the appointment of vigilance committees in the several districts of the kingdom, to watch over architectural ruins, to obtain means for their maintenance, and to prevent their destruction by demolition, or by no less ruthless restorations. Mr. Golwin suggested that the time had arrived when Government ought to appoint a commission for a general examination of ancient buildings, or to obtain reports as to the custody and condition of architectural remains. Although we do not go to the extent of the last named gentleman in accusing Government of having "behaved most infamously in regard to art, science, and antiquities," we admit that the time has come when the preservation of our historical structures should be seriously undertaken. We have no faith in Government initiation, because here Government is not permanent; and, in the direction measures to preserve works, change would be most disastrous. Besides, Government initiation would, by an easy process, glide into the creation of Government situations, and into the development of bureaucracy, of both of which we have more than enough already. In France the Commission for the Conservation of Historical Monuments has been the means of their destruction, and Government protection has destroyed more than did la bande noire. On almost the last occasion of M. de Tocqueville speaking in public, he called attention to the degradation and destruction of the Abbey of Mount St. Michel, which is in the custody of the Home Ministry. Consequently, we much prefer the course suggested by Mr. Scott, and believe that the Institute of British Architects could, if it chose, without waiting for Government initiation or Government commissions, effect the preservation of architectural remains and historical monuments by affiliating to itself the various architectural, archaeological, and antiquarian societies existing throughout the country. A great deal would be done if the Institute were to invite these societies to report on the present condition of architectural remains, accompanied by suggestions for their preservation, and if it were to publish these communications, in a condensed form, at the end of each session. The expense would be trifling, and the publicity thus procured would prevent the perpetration of many an act of Vandalism and neglect.

Starting from no further back than the beginning of the present century, the works of architectural, historical, and archaeological interest that have been swept away or irreparably mutilated form a melancholy catalogue. There are some utilitarians we are aware who insist that works which have nothing to distinguish them but their historical associations are not worth preserving, for they only encumber the ground. These practical gentlemen would break down Stenchege to mend the roads. But they should remember that history cannot be brought within the knowledge of many except by association with things visible, and that structures with which representative men are associated are just as much monuments to their memory as statues, or obelisks, or columns, or hospitals, or educational institutes, or museums, or reformatories. We take more interest in Shakespeare's house at Stratford than in his statue at Drury-lane, although the house has no intrinsic merits and the statue is a work of art. In the Eagle tower of Caernarvon Castle was born the first English Prince of Wales, nearly 600 years ago,—an event of note in our history. Pennant described the Castle to be, towards the conclusion of the last century, exactly the same as it was in the thirteenth century with respect to the exterior, including the statue of the founder—the First Edward—dagger in hand, over the entrance. Godstow was associated with one of the most popular of English traditions,—the fate of Fair Rosamond. In the chapel used to be exhibited her coffin and the punning inscription over her tomb.

"Hic jacet in tumba, Rosa mundi, non Rosa mundi,
Non redolet, sed olet, que redolet solet."

and the remains of curious paintings.

Pontefract Castle, which forty years ago was "a mass almost unintelligible," with "several round towers attached together, which conjecture presumes to have been the keep," was the scene of some of the most tragical events in our annals that have been immortalised by the genius of "the poet for all time." The very name calls up the bloody shadows of Thomas of Lancaster, Richard II., Salisbury, Rivers, and Grey. In the tower of Bolton Castle Mary Stuart was confined. Forty years ago or so its tenant was a farmer. The stones of Joreval Abbey were used to build fences and mend roads, and stone coffins were dug up to be turned into swine-troughs. When the present century was in its teens, a person in the neighbourhood of Masham remembered to have seen the highways strewn with fragments of inscriptions, and yet of this edifice it was written at the dissolution of the monasteries—"The lead from Joreval Abbey amounts to 399 fadders; the fairest church there (in Yorkshire) that may be seen."

Kenilworth, just before Scott's genius made it a place of pilgrimage, was a mass of bare walls falling to decay, and the habitable place was a portion of the gateway—under which Elizabeth and her paladins and statesmen passed—wherein a farm laborer's family dwelt, and cooked their food beneath an alabaster chimney-piece decorated and carved with Leicester's initials. Denney Abbey, where the foundress of Pembroke Hall was buried, was converted into a farm-house, and the refectory into a barn, though in her will she enjoined the Fellows at Cambridge "to visit the nuns of Denney, and give them ghostly counsel on just occasions." Donnington Castle, of which there remained the gate-house, with its two round towers, was the home of Chaucer, the father of English poetry. Lupus Hall, 90 feet by 45 feet, and the Chancery Court of the county, in Chester Castle, were pulled down fifty or sixty years ago to make room for the county gaol. Titchfield House, built on the site, and with the materials, of the Abbey wherein Henry VI. married Margaret d'Anjou, was the place of concealment of Charles I. after his flight from Hampton Court; but the greater part of the structure "has either fallen or been taken down." And of all these, with others too numerous to mention, which many of us have seen, what now remains to recall to mind the history of our fathers, or to indicate the progress of our race?

THE ARCHITECTURAL MUSEUM.

THE annual exhibition of works submitted for prizes to the Council of the Architectural Museum is now open in the Gallery at South Kensington. There are specimens of ironwork, stone and wood carving, colored decoration, painted glass, and tile pavements, all more or less creditable to their respective authors. We are, knowing the intelligence of our best workmen, by no means surprised at the talent displayed by them, but we were pleased to find so few examples of wasted industry. With the exception of one or two drawings for Mr. McColla's pavement competition, there are none which do not bear evidence of knowledge and study. Several in this latter series are worthy of the highest praise. They are not inferior to those which the enterprise of our manufacturers have hitherto drawn from our best designers.

The several subjects sent in for a representation in a carved stone panel, 2 feet square, of "Queen Eleanor watching over Edward I. when wounded," are, perhaps, taken together, the least successful, but we must remember that it was the most difficult task, and we can scarcely expect even "artist workmen" to possess the knowledge of professional sculptors—one only, out of the seven designs, shows the craftsman to have been equal to his work, and we shall wonder much if "Veritas," when the envelope is broken which contains his name, turns out to be a "workman" in the ordinary meaning of the term. Although the prizes are not yet awarded in this class, there can be no doubt about the result, and need, consequently, be no hesitation about anticipating the verdict of the judges. The composition of the group, the simple lines of the drapery, and the carving of the different heads, all show a well-trained skilful hand. The selection of the second best work will be a more difficult matter, on account of the merits of the other works being so evenly balanced.

The subject of a "carved and moulded stone capital," seemingly, was more suitable to the class to which the invitation was addressed. Eleven designs are exhibited, all excellent, both in execution and design, and almost equally deserving distinction.

The same remarks apply with justice also to the wood-carving, but there is here a greater diversity in style. In some cases it is polished as smoothly as glass, and wrought with the excessive delicacy which distinguishes French work; in others it is vigorously cut, yet still richer in appearance than the more elaborately defined panels, and the talent of the workman is seen, perhaps, as much in what he has forborne to do as in what he has executed. One or two competitors, disdaining the permission to use lime or other soft wood, and regardless of the extra labor it involved, have carved their designs in English oak.

The prizes for modelling in clay do not appear to have enlisted a single competitor. We wonder at this circumstance, for the subject given was by no means a difficult one, nor was it out of the ordinary line of business of many workmen in London. Neither did we see any copies of the hammered iron scroll-work of St. Paul's Cathedral, although prizes to the amount of sixteen guineas were offered for it.

The invitation to smiths for a wrought-iron door-handle has, however, attracted three competitors. The productions of two of them are good, both in design and execution, one exceedingly so. The third, representing a vine branch, is splendidly executed, but it is more a copy from nature than a design. Another specimen of hammered iron, by the same

workman, causes us to wonder why he did not compete for the copy of St. Paul's scroll-work. In that class his skill would have met with deserved reward.

The six examples of stained glass are not first-rate works, but the duller-looking one, as they are now placed, is, when carefully examined, perhaps the best.

The Ecclesiological Society's prize of five guineas for the competitor who shall most successfully color a cast of one of the Angelic choir in the north transept of Westminster Abbey, has attracted no less than twenty-two specimens of varied excellence. The judges in this class have made their award of the first prize to Mr. Wood, of Brown-street, Bryanston-square; of the second prize to Mr. Harrison, of Euston-square; and of the third to Mr. Lea, of Lutterworth. There can be no doubt of the justice of the selection. The panels have been colored in a masterly way; but, without derogating from the merit of the successful men, we cannot but think that the plain cast, stained only to represent the original stone, which is hung amongst the submitted decorations of it, is preferable to any and all of them. The one looks a noble material; all the rest appear like plaster hidden by color, on account of their natural unworthiness and unfitness to be shown without it. In no single example, by the way, is the plaster stained to the natural appearance of the stone, and then simply picked out with color, and this, we believe, is the only manner in which the appearance of the simple stone could be improved by its application. Still, as decoration, the prize designs are excellent in the style of the surface ornament, as well as in the harmonious arrangement of the color.

Several pieces of work are exhibited in competition for extra prizes offered by the Society for "actual work." As this invitation is open to all workers in stone, wood, metal, glass, and color, of almost every description, and as it needed not express preparation, we expected a larger contribution than three or four examples. A piece of punched brass-work, bearing in relief the "City arms," admirably arranged, deserves notice; and there are some good bronzed castings for a table and umbrella stand.

Mr. McColla's offer of two five-guinea prizes for tile pavements has brought no less than twenty-eight competitors into the field; we have already mentioned their general excellence, which is so great as to render the award of the premiums a matter of great difficulty. We have not space to particularise all those which really deserve mention, and as the prizes are still unawarded, we forbear, from obvious reasons, from mentioning any; but we would urge our readers to visit the Museum, and themselves recognise the ability which the Council of the Architectural Museum has evoked.

THE PROPOSED ROAD FROM KENSINGTON TO BAYSWATER.

WE understand that a decision has been come to as to this road. The Chief Commissioner of Public Works has finally decided upon the plan for a sunk road through Kensington-gardens. The road on the north will commence in the Bayswater-road, and run across Kensington-gardens west of the Serpentine, and parallel with the new broad walk, emerging on Kensington-gore, opposite the new north entrance to the Horticultural Gardens, and therefore close upon the Exhibition itself. Its length is to be just three-quarters of a mile, and it is carried across at a uniform level of 12 feet below the surface. It passes beneath the carriage drive and Rotten-row by means of two short tunnels. The total width of the roadway is to be 40 feet, of which about eight will be devoted to a footway on one side. Both sides of the cutting will be formed of sloping banks of turf, and none of the grown timber will be interfered with. The cost of the road is estimated at £35,000, the Commissioners of Public Works undertaking to pave and light it. The tolls are to be the same as at Kensington-gate—3d. for one horse, 6d. for two, and a halfpenny for each foot passenger along the pathway. The road is to be open day and night. Every holder of a £100 debenture will receive an ivory, or ticket, which will pass himself and his cab or carriage toll-free. Application will be made to Parliament upon its meeting for the necessary powers, and the Act is not to come into operation till £30,000 out of the £35,000 have been subscribed for. We believe the plan of the new road is that proposed by Mr. Page.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE adjourned special general meeting of members only, was held on Monday last, to resume the consideration of the report from the Council on professional practice and charges. After a discussion, protracted until a late hour, the report, as amended, was adopted, and ordered to be printed for circulation and publication.

PRESERVATION OF WOOD.—The preservative action of sulphate of copper on wood has long been known, but there were several anomalies in its action which required explanation. The *London Review* says that Koenig has lately investigated the chemical reactions which occur in the process. He finds that the retention of copper in the pores of the wood is occasioned by the resinous matter present; those varieties which contain the most resin retaining the most metal; whilst woody fibre, from which the resin has been extracted by alcohol, fixes no copper whatever in chemical combination. It has, furthermore, been found that the impregnated wood contains less nitrogen than that which is unimpregnated; and since nitrogenous matters are well known to be promoters of putrefaction, their removal readily accounts for the increased durability of the coppered wood. The utility of the blue vitriol as a preservative may also depend, in a great measure, upon the resinous copper salt which is formed, and by which the pores of the wood are more or less filled up, so that the attacks of insects are prevented. It is recommended that the wood be soaked in the copper solution for a longer time than is sometimes the case, otherwise the full benefit of the action is not obtained.

THE DANTE GALLERY.

THE name of the great Italian poet is so invested with interest to the literary and artistic world, that any comments on, or illustrations derived from, his highly imaginative pages deserve more than ordinary consideration. The panorama now open at St. James's Hall, Piccadilly, consisting of twenty-seven colossal paintings from the most striking portions of the "Divina Commedia," by modern Italian artists of acknowledged celebrity, will attract attention from those works being offered as fair specimens of the present state of painting in Italy, and they will also excite an interest in the minds of educated persons who may wish to become more clearly acquainted with the meaning intended to be conveyed in some of the mysterious passages of this early writer. Dante was a banished and disappointed man, and seems to have imagined that part of his poem known as the "Inferno" for the sake of devoting his political enemies to eternal torments. The whole, founded on the abstruse dogmas and formula of the Primitive church, will readily explain, besides the quaint style of writing, the difficulty of understanding many of the bitter allusions which he dared not at that period express with greater clearness.

In the present instance, however, we may say, without hesitation, that the "fine frenzy" of the poet has in no degree disturbed the calm and academic feelings of the painters. If this poem of Dante's produced a powerful effect on his contemporaries and their successors in art during the fourteenth and fifteenth centuries, and exercised a guiding influence on their works, certain it is that neither that powerful effect nor the guiding influence which prevailed during those periods has reached the professors of art in Italy by whom these illustrations have been designed and executed.

The figures generally are correctly drawn and intelligibly grouped, carefully copied from models in the studio, and transferred to the canvas with cold and conscientious exactitude. There is great difficulty, however, in treating this part of the subject. The figures depicted are real persons, and are even mentioned by name, but they are described as undergoing imaginary torments in purely imaginative regions. They are, however, the principal beings in a poem, and that poem, too, of the most mysterious kind. The question then arises how far their forms should be idealised by the painter to bring them into unison with poetic elevation of thought and yet preserve an individuality which might be defended, even if brought down to commonplace portraiture. But how would such treatment be consistent with the terrors and punishments inflicted upon individuals which are intended to apply to human nature and to every class of crime? Besides which the poet employs, to work out the intention of his poetic vision, animals and birds, some real, others imaginary, demons of various kinds, characters from the heathen mythology, angels and other heavenly messengers, all more or less employed in Hell, Purgatory, and Paradise. The artists by whom this series of pictures has been painted have solved the problem in accordance with the prevailing taste of the day, as regards imitative art, by rendering all their figures as individual as possible, for even the demons are merely ugly men with tails. As, however, this panorama has been previously exhibited in Florence with great success, we may conclude that the taste of the people has been studied, and the dogmas of papacy have been rendered in a manner permitted by the highest authority of the Roman Catholic Church.

It might be doubted, all these circumstances taken into consideration, whether the poem of the "Divina Commedia" should have been illustrated at all, but great artists, from the Renaissance downwards, have taken an entirely different view from those now exhibited of the subjects they have selected from it, and have given to them the charms of the highest treatment of which art was capable, whether in the utmost purity of sculptural form or the more varied resources of painting, either in outline, grouping, or coloring; and these efforts date from the time of Giotto and Orgagno, passing on to Raffaele and Michel Angelo, and come down to Canova, Flaxman, Ary Scheffer, and Eugene Delacroix.

If the plain matter-of-fact style of the present exhibition has proved by experience to bring the subject home with more force to the religious mind, those acquainted with the works of art by the great masters just mentioned feel how much is lost to the pictorial sentiment of cultivated intellect. Of Giotto little can be said; Orgagno is best known, perhaps, by his copy of Leonardo's "Last Supper"; Michel Angelo and Raffaele are supposed to have derived more advantage in style of conception than by direct illustration of the poet. The celebrated "Day of Judgment," by the former, is called Dantesque in treatment; but in the refined elegance of Canova and Ary Scheffer, the classic feeling in the works of Flaxman, and the breadth and tone of Eugene Delacroix, we see that even the "Inferno" is capable of poetic elevation by men of mind. With a strong recollection of "Paolo and Francesca," by Ary Scheffer, the picture of that subject in the panorama produces a painful effect; for, besides not being one of the best in the exhibition, it is so offensively commonplace that the only praise it deserves is for, in a striking degree, showing the difference between high and low art. Ary Scheffer's picture was not only pure and elegant in the forms of the unfortunate lovers, but the very tone of color was true to the poem which speaks of the "brown air" through which they are driven by racking winds, and which whirls them away for ever. A view equally poetical has been taken by Eugene Delacroix of "The Torment of Filippo Argenti," in the marshy Stygian Lake. We must give the painter of this picture in the panorama credit for not being tempted to paint the figures covered with the filth of the lake, and he has failed altogether in any attempt to convey that impression; but the

French painter did all that the poem required, and also escaped from that difficulty. He does not invest the figures with a refinement in drawing like Ary Scheffer; on the contrary, he treats them in a broad and picturesque manner, and the "marshy and miry element" is rendered very powerfully to those who know the poem, by the whole subject being enveloped in an atmosphere so dense and murky that no human being could breathe it and live. It was this subject from Dante which excited the wayward enthusiasm of Eugene Delacroix to paint his first picture for public exhibition in 1822, producing an immense sensation from the daring novelty of the style, which effected almost a revolution in art. It disgusted his master, Baron Guérin; threw the French critics in fierce contention; and won the admiration of Gros, Gérard, and Prudhon. Carlyle begins his essay on the "Hero as Poet" with the name of Dante, and, writing of the poem, he says "It has all been as if molten in the hottest furnace of his soul, and the first view he gets of the Hall of Dite is a red pinnacle, a red hot cone of iron glowing through the dim immensity of gloom." After quoting authorities so high, enough has been said to prove that the Italian painters of the present day are far below the mental standard required to illustrate the scenes in this great mystic and heroic poem.

The cold and academical style of the figures in the present panorama becomes still more prominent in the localities in which they are placed, which are conventional without being imaginative, in the higher sense of the term. In fact, the localities wherein torments so frightful are endured are as gray and unpicturesque in color as the ordinary forward drop-scene of the interior of a prison in a third-rate London theatre, and, generally speaking, subterranean gloom is rarely sustained, so that the three divisions of the poem are not sufficiently marked to assist the mind of the spectator by the necessary contrast. The whole series has been designed by Cavaliere Filippo Bigioli. Some of the superior paintings are from his pencil, but the whole panorama has been produced with the assistance of Chierice of Modena, Paliotti of Naples, Grandi, Guerra, Priora, and others. From so many names being mentioned, we might fairly conclude that the present exhibition would enable us to form a fair estimate of the state of modern historical art in Italy.

ELECTION OF DISTRICT SURVEYORS.

ON Friday last the Metropolitan Board of Works proceeded to fill up vacancies in the three district surveyorships of Bethnal-green; St. James, Westminster; and Putney and Roehampton. At the close of the first voting in each case the number of candidates was reduced to six. Subsequently, on each voting, the candidate having the smallest number of votes was struck off the list:—

DISTRICT OF BETHNAL-GREEN.

Candidates.	Vote 1.	Vote 2.	Vote 3.	Vote 4.	Vote 5.	Vote 6.
Hargrave Stevens (elected).....	28	28	26	21	25	21
John J. Cole	19	—	—	—	—	—
S. Salter, Junr.	17	—	—	—	—	—
Horace Field	20	15	—	—	—	—
Josiah Houle	6	—	—	—	—	—
G. O. Lane	7	—	—	—	—	—
S. S. Markham	24	18	15	—	—	—
Henry S. Legg (withdrew)	—	—	—	—	—	—
Joseph Liddiard	13	—	—	—	—	—
John Billing	21	22	17	14	—	—
Sydney Godwin	10	—	—	—	—	—
Thomas E. Knightley	27	28	22	25	23	17
Edward Roberts	11	—	—	—	—	—
Arthur Cates	15	—	—	—	—	—
Robert Kerr	34	20	23	18	15	—
Frederick Todd	—	—	—	—	—	—
Henry Dawson	5	—	—	—	—	—

DISTRICT OF ST. JAMES, WESTMINSTER.

Candidates.	Vote 1.	Vote 2.	Vote 3.	Vote 4.	Tie.	Vote 5.	Vote 6.
G. W. Mayhew	27	25	26	24	—	21	17
Alex. Peebles	5	—	—	—	—	—	—
John J. Cole	21	—	—	—	—	—	—
Horace Field	26	15	—	—	—	—	—
Henry Laxton	12	—	—	—	—	—	—
S. Salter, Junr.	21	—	—	—	—	—	—
Josiah Houle	9	—	—	—	—	—	—
G. O. Lane	6	—	—	—	—	—	—
S. S. Markham	26	22	17	18	13	—	—
Henry S. Legg	22	23	21	18	15	12	—
Joseph Liddiard	19	—	—	—	—	—	—
John Billing	21	—	—	—	—	—	—
Sydney Godwin	13	—	—	—	—	—	—
Edward Roberts	12	—	—	—	—	—	—
Arthur Cates	20	—	—	—	—	—	—
William Lightly	28	18	14	—	—	—	—
Robert Kerr (elected).....	29	26	24	25	—	25	26
Frederick Todd	—	—	—	—	—	—	—
Edward L. Paraire	2	—	—	—	—	—	—
John W. Papworth	12	—	—	—	—	—	—

DISTRICT OF PUTNEY AND ROEHAMPTON.

Candidates.	Vote 1.	Vote 2.	Vote 3.	Vote 4.	Vote 5.	Tie.	Vote 6.
Alfred J. Hiseooks (withdrew).....	—	—	—	—	—	—	—
S. Salter, Junr.	18	20	12	—	—	—	—
G. O. Lane	7	—	—	—	—	—	—
Henry S. Legg	32	31	27	24	23	16	—
Joseph Liddiard	16	17	—	—	—	—	—
Edward Roberts	7	—	—	—	—	—	—
Arthur Cates	12	—	—	—	—	—	—
William Lightly	27	26	24	20	24	—	17
Alex. Peebles	12	—	—	—	—	—	—
Frederick Todd	2	—	—	—	—	—	—
Edward L. Paraire	3	—	—	—	—	—	—
W. B. Hays	3	—	—	—	—	—	—
S. S. Markham	20	22	18	14	—	—	—
Horace Field (elected).....	29	29	27	26	23	24	25

NOTES FROM PARIS.

THE Directors of the *Crédit Mobilier* have given notice that they desire to receive designs for a statue of Peace, which is to be erected in the courtyard of the hotel which will be soon terminated on the Boulevard des Capucines. The Academy of the Beaux-Arts will decide which design is best. The competitor obtaining the first prize will be charged with the execution of the statue, and the second will receive an indemnity of 3,000*fr.*, and the third one 1,500*fr.*

The Minister of Public Works has appointed a commission, composed of MM. Michel Chevalier, Alfred Leroux, Vuillefroy, De Franqueville, Avril, Busche, Talabot, Didion, Toulon, and Prosper Tournay, to inquire into and report on the construction of railways, and the cheapest mode of working them, the speed at which trains ought to travel, the terms of the contracts existing between railway companies relative to carriages in correspondence, and on all other questions relating to the working of railways which the Minister may from time to time submit to it.

A plan has been recently adopted in Paris which might with advantage be followed here, whenever a new public statue is to be erected. A model, in wood, of the statue of Prince Eugene Beauharnais has been "offered up" on the proposed site for the completed work in the Place bearing his name, and facing the *Barrière du Trône*. It is painted to imitate bronze; dressed in the costume of a general, the left hand rests upon a sword, while the right holds a scroll of the constitution of the Kingdom of Italy.

C. H. D., writing from Paris, says:—

Demolitions and constructions having been stopped by the severity of the frost, have been resumed actively since the weather has become milder. On the sides of the *Montagne Sainte-Geneviève*, the *Caserne des Carmes* and the ancient *College of Lizeux* are about to be cleared away; the greater portion of these buildings has been attacked, except the chapel, which is still untouched. It consists of a simple nave, lighted by three openings with trefoil windows in ogival tracery; the spire, covered with moss, still preserves traces of its primitive elegance. The first stone of this chapel was laid in 1370 by Charles V. It is remarkable for having been installed the 1st September, 1815, as the site of the first elementary school after the Lancaster method.

An inquiry took place at the *Mairie* of the 9th Arrondissement on the 13th inst. and following days, on the new projects of communication in Paris—viz.,

1st. Formation of a square in the prolongation of the Rue Lafayette, at the left of said street, between the Hues du Faubourg Poissonnière and du Faubourg Montmartre, and the opening of new streets leading into the square.

2nd. Construction of a new prolongation of the Rue Lafayette, between the Rue du Faubourg Montmartre and the Rue de la Chaussée d'Antin.

3rd. Prolongation of the Rue Lepeletier as far as the Rue du Faubourg Montmartre.

4th. The widening out to 20 mètres of the Rue Olivier and the prolongation of this street, on the one hand, between the Rues Saint Georges and Saint Lazare, at the extremity of the Rue de la Chaussée d'Antin; on the other hand, between the Faubourg Montmartre and the continuation of Rue Lafayette.

As regards the Rue Lafayette, according to arrangements entered into with the *Chemin de fer du Nord*, this street was authorised to be prolonged from its present termination to the Rue du Faubourg Montmartre, and it is probable that the continuation will be shortly effected.

The Hall, or "Palais," of the Tribunal of Commerce is again being rapidly pushed forward after the frosts.

Among the difficulties encountered and surmounted in the construction of the collecting sewer, the passage under the Saint-Martin Canal at La Villette has been the most important. The greatest obstacle was the influx of water, which, penetrating through a fissure in the invert of the canal, invaded the works in such quantities that the pumps for drainage purposes were totally inadequate; as the canal could not be drained off even for a day, on account of the traffic, which it was impossible to intercept, recourse was had to divers who, by repeated examination of the bottom of the canal, found out the leaking place and caulked it up. This portion of the sewer is the upper section of the subterranean artery which falls into the *collecteur général* near the Place de Laborde. A similar work is to take place in this year, in carrying on the Quay "collector" as far as the *Rapée*. This sewer now stops short at the Hotel de Ville. In order to continue it, the lock of the Arsenal on the Saint-Martin Canal must be passed under.

All the Parisian sewers are to join in the great collector of Asnières, called "collecteur-général," including those of the left or southern bank of the Seine; the sewer of the Boulevard Malesherbes receives the contents of the group. Into the latter are discharged the ancient *égout de ceinture*, which, starting from the Rue Menilmontant, formerly emptied itself into the Seine at Chaillot; that of the Rue de Rivoli, and the sewer which, receiving at the Place des Victoires all neighboring branches, is carried under the Rues Neuve des Petits Champs, Neuve des Capucines, and the Boulevard de la Madeleine.

The sewers on the south of the Seine are all united opposite the Place de la Concorde, where a junction is effected with those on the north side by means of an inverted syphon under the Seine.

The works of the new "Morgue" are being carried on again. Piles are being driven to support the concrete and foundations of the building, which will be constructed below the level of the quay, but at such a height as to be above the reach of floods.

The new Theatre du Prince Imperial, in the prolongation of the Rue du Caire, before the square of the Conservatoire des Arts et Metiers, is advancing rapidly, all the heavy work being completed. The facade may be thus described:—On the ground floor there are five large arcades, separated by pilasters; on the first story five large windows, separated by four columns; second story, four small windows. A curvilinear pediment crowns the edifice. Already the inner girders (wrought-iron) of this "salle" have been placed in position.

At the interior of Notre Dame Cathedral the works of restoration have reached the transept, and the scaffolding abutting on the northern porch has been shifted to another portion. As soon as the works in this portion of the church have been completed, it will be again consecrated to its former religious ceremonies, and the portion now occupied for public service will be delivered over to the workmen; this is expected to take place in a few months. During the year 1861, which will bear a prominent part in the history of this cathedral, important works have been executed in Notre Dame.

Since the 1st January, 1861, the spire has been completed, and the four corners supporting it have been decorated with statues of beaten lead, and galvanized; a

considerable part of the roof has been renewed; the gable end of the south porch has been rebuilt.

The restoration of the chapels opened in the northern collateral have been terminated, and they are being railed in; the principal altar has been replaced on its base, the woodwork of the choir has been restored to its position anterior to the repairs, and an organ loft has been added; the chapels around the sanctuary have been all repaired, and the defective portions of the stained glass have been restored. M. Maréchal, of Metz, has been appointed to undertake this portion of the work.

On the exterior of the cathedral the same activity reigns. The pediment over the smaller cloister door has been completely renewed; also the *Porte du Zodiaque* (left side) and the *Galerie des Rois* is undergoing a course of repair; in the latter several vacant niches have been filled up, there being only eight remaining without statues. All the nave has to undergo the scratching and scouring process, from the pavement up to the keystones of the arches. The chapels of the south collateral are to be restored; of these latter the windows are already renewed, as also the surrounding galleries and several chapels on the left of the entry. It was reported, on good authority, that all the works completing the repairs of Notre Dame were to be finished before the end of this year, but it does not seem to be possible.

The ancient boulevards formerly encircling Paris are being vastly improved; those below Montmartre have had their footpaths asphalted and bordered with granite; the two carriage ways (right and left of the centre avenue) have been macadamised in the middle and paved with blocks at the sides. The wide promenades forming the central avenue have been gravelled and planted with four ranges of young trees.

At the south of Saint Maude there is a vast plain, purchased by the authorities of Paris, in order to be annexed to the Bois de Vincennes, which will thus be joined to the fortifications on the side of the Porte de Reuilly. Important works are being now carried on in the plain; the few houses, sprinkled here and there, are in course of demolition; the wall which separated it from the Vincennes Wood has been thrown down. About a hundred kilometres of boulevards, sinuous avenues, both great and small, are projected, and no small amount of labor is daily expended in earthworks, &c.; lakes are being formed in several places, and on all sides the greatest activity prevails in the transport of earth and stone for the purpose of ornament. The principal thoroughfare will start from the Bois de Vincennes, a little above the town of Sainte Marie, towards the Porte de Reuilly. It is in a very forward state, and is to be continued in Paris by a boulevard, similar to that of Prince Eugene, so as to join into the Place de la Bastille, between the Rue de Charenton and the Vincennes railway station.

Another great thoroughfare is also in an advanced state, viz., that which is to run from the Route de Paris to Charenton, a little above the Bercy Park, as far as the *Asile Imperial* at the Bois de Vincennes. As to the "*Parquet*" de Saint Maude, it has been completely transformed and converted into an English park, with a river, lakes, green swards, &c. Before two years have elapsed the Vincennes Wood will be brought to such perfection as to rival (if possible) the Bois de Boulogne and the Pré Catelan.

The Boulevard de l'Emperor, proposed to extend from the extremity of the Cours de la Reine as far as the Bois de Boulogne, has been in construction for some time past; it has already been levelled, planted, lighted with gas, and opened for circulation, from the gates of La Muette, as far as the ancient *Barrière Sainte-Marie*, on the heights of Chaillot; on the right and left of this thoroughfare, for a length of above 500 mètres, workmen are busily engaged sinking foundations for first-rate "hotels."

The Minister of State has just decided that an Exhibition of Fine Arts is to take place at Nice next Spring. In order to give all possible importance to this display, the most celebrated artists of the day have been called upon to contribute, and a great number have signified their intention of so doing. Among the others we may name Gudin, Carot, Haneora, François, Lentun and Frère.

The *Constitutionnel* has the following remarks on the works lately carried on by the City of Paris, and on other subjects connected with the municipal operations:—"During the course of those operations the price of rent increased. A part of the Parisian population injured in their interests attributed their sufferings to the very works which had for object to preserve them. The demolition of houses was considered to be the cause of the rise in rents, and the general remark made was that the new buildings exclusively contained sumptuous apartments, and were of no use to people of moderate fortunes. Both those charges are equally incorrect. The real cause of the rise in house-rent is the increase in the population, which, in ten years, has received an addition of 427,000. The demolition of houses has been made up by the construction of a much more considerable number. It is a complete error to think that the majority of the apartments in the new houses are reserved for the richer classes. From 1852 to 1861 the number of new buildings completed in the department of the Seine amounted to 50,417. The demolitions did not exceed 10,143. During the last year, and in Paris alone, 2,932 houses, containing 17,855 apartments, have been either built or enlarged. During the same period 444 houses, containing 6,952 apartments, have been either wholly or partly demolished. The difference in favor of the new constructions is, therefore, 1,788 houses and 8,533 apartments. Are they the rich quarters which have benefited by this surplus? Certainly not. The Quartier of the Bourse has lost four houses and 202 apartments. The Quartier of the Elysée has lost 55 houses and 786 apartments. On the other hand, the Quartier Popincourt, de Reuilly, Ménilmontant, Buttes-Montmartre, Buttes-Chaumont, the Observatoire, and Vaugerard have each gained from 1,500 to 2,000 apartments. The Arrondissement of Popincourt alone, which certainly is not inhabited by the rich classes, has been enriched by 300 houses, containing 2,369 apartments. This enumeration will suffice to prove that the demolitions are not the cause of the high price of rent, and that if the municipality had not taken the initiative in these operations, the increase in the population would have had more disastrous consequences, and would have assumed the character of a real scourge."

SOUTH KENSINGTON MUSEUM.—During the week ending 25th January, 1862, the visitors have been as follows:—On Monday, Tuesday, and Saturday, free days, open from 10 a.m. to 10 p.m., 6,901. On Wednesday, Thursday, and Friday, students' days (admission to the public 6*d.*), open from 10 a.m. till 4 p.m., 1,231; total, 8,132. From the opening of the Museum, 2,454,626.

PROFESSOR SMIRKE'S LECTURES ON ARCHITECTURE AT
THE ROYAL ACADEMY.—LECTURE II.

DR. MOORE tells us, somewhere, of his having met on his continental travels with a Scotch tourist who was delighted with the mountain scenery of Italy, and was expressing his enthusiastic admiration of one of the sub-Alpine lakes, when he was rebuked by the Doctor, who assured him that there were some scenes of similar character in Scotland of not inferior beauty and sublimity, and specified one as particularly worthy of his admiration, which turned out to be part of the Scotch laird's own paternal estate. He had, in fact, been born in the midst of natural beauties, so familiar, or so lightly regarded by him, that they had escaped his recollection, or, perhaps, even his notice. A similar indifference is apt to be felt by us towards all objects that are too easily accessible. In such cases familiarity breeds contempt; whilst we are wont to show and to feel unusual zeal and animation when the object of our research is remote, or accompanied in its attainment by the stimulus of difficulty.

Thus it is that we live surrounded by stores of knowledge, of which we rarely avail ourselves; museums which we seldom visit, and libraries which we never consult. Many such neglected mines of knowledge exist in London; many a rich vein is daily trodden, as it were, under our very feet, without tempting us to extract from it the treasure it contains.

I purpose this evening to invite your attention to one of the greatest of these depositories of intellectual wealth—the Library of the British Museum.

Without attempting to bring before you even the shortest or most meagre enumeration of all the objects of interest to the architectural student which that vast repository may contain (such an enumeration would, indeed, be as much beyond my powers as it would certainly be beyond the narrow limits of a lecture)—without attempting any such task, I propose now to indicate to you a few of the more striking specimens of the literary and artistic wealth which are in so great abundance in the Library of the British Museum, at our disposal, accompanying them with such remarks as may be naturally suggested by the consideration of the objects themselves, as I enumerate them. I do not design here to touch upon the antiquities at the British Museum; a critical examination of these, or even a correct appreciation of them, would be beside my purposes as well as beyond my powers. To enter that department would assuredly lead us into antiquarian disquisitions, which I am anxious to avoid, as being foreign to my duties within these walls.

The first book I shall advert to is a very large folio volume, descriptive of the great Flavian amphitheatre in Rome, and appears to have been the result of long and careful examinations made chiefly during the excavations by the French whilst in military occupation of Rome in 1811, 1812, and 1813. The author was a French architect, Mons. Paris, who had long been a resident in that city, having quitted his native country at the outbreak of the great Revolution. He seems to have been a painstaking and intelligent observer, and the delicately executed drawings of which this volume consists, with the very minute notes explanatory of them, bear testimony to his great carefulness as an architectural draughtsman. He appears to have quitted the practice of his profession as an architect early, and to have been engaged for some years in the decorations of the Royal theatres and of the Opera, at Paris. During his subsequent exile in Italy those studies were made, one of the fruits of which was the magnificent volume I have alluded to.

Probably there never was executed so complete a monogram of any one building. The only subject of regret is that the drawings generally do not distinguish so clearly as one would wish between those parts which are the representations of the actually surviving portions of the building, and those parts which are the conjectural restorations of the ingenious antiquary himself. Some of the drawings, however, are not open to this criticism, but are beautifully executed delineations of the edifice in its revived state; and I can safely affirm that all the drawings bear very strong marks of having been the work of a painstaking and scrupulous artist. The work was intended and fully prepared for publication; it has remained, however, in MS., and ultimately became by purchase the property of the Trustees of the British Museum in 1847.

In many respects the Colosseum at Rome is one of the remarkable buildings of antiquity. It has all the attributes of grandeur. In its actual dimensions, I believe it to be the largest single building ever erected, unless we except the Pyramids of Egypt, which are, perhaps, hardly to be classed as works of regular architecture. Its simplicity of character and unity of design are also sources of grandeur. There is a breadth of manner and a noble abstinence from trivial ornamentation in its external architecture, which greatly elevate the character of the building. There is a majesty, even, in its stupendous strength. It stands a monument of consummate constructive talent; a talent not parading itself, like a medieval cathedral, by the perpetual manifestation of great efforts—lateral thrusts, and counterbalancing weights; huge picturesque masses of masonry piled up solely to resist the tendency to self-destruction constantly operating on the structure. This immense building, on the contrary, stands, and has stood for eighteen centuries, not by any straining exertion, but simply because all the laws of static science have been scrupulously regarded. I am justified in saying that it has stood for eighteen centuries, because, notwithstanding the concessions of earthquakes and tempests, and the erosive agency of natural causes, it still stands with few marks of substantial injury, except those which it has received from the destructive hands of man.

It has been for ages the quarry whence ready worked stones have been continually abstracted, and whole palaces have been the results of such spoliation. Yet it survives, next after the Pyramids, the greatest architectural monument in the world.

"A ruin, yet what a ruin! from its mass
Walls, Palaces, half cities, have been reared;
Yet oft the enormous skeleton ye pass,
And marvel where the spoil could have appeared."

I must not dwell much on the structural merits of the building, but I cannot refrain from expressing my persuasion that the very ablest practical mason of the present day might study with great profit the jointing, bonding and bedding of this mass of masonry; while the brickwork is equally admirable: the dexterous economy of labor by which rubble-work, consisting of broken fragments of stone embedded in Pozzolana cement, is strengthened by an artful introduction of bonding courses of brick, these bricks being often of very considerable size, and always of excessive hardness. All this union of economy of labor with the utmost strength is, indeed, well calculated to excite the admiration of every practical eye. Yet this wise economy of labor and materials, which is apparent throughout, was never allowed to interfere with that stability of workmanship

which was evidently a paramount consideration with the builders. The three-quarter columns, for example, of which there are on the exterior so great a multitude, are not built as insulated blocks of stone applied to the surface of the wall for the mere sake of ornament, but are built in and bonded with the general masonry of the walls, contributing, therefore, to their strength quite as much as to their embellishment; in fact, the very reverse of what was very commonly the case with the slender shafts of mediæval architecture, which were often inserted to give lightness and richness of effect to the pier against which they stand, serving, it is true, to convey to the mind's eye the idea of support to the corresponding members of the archivolts, and continue down their lines, but not practically forming any real integral part of the pier or jamb against which they stand. That this was, at all events, often the case is obvious from the fact there are few mediæval buildings that have not been more or less deprived, either by natural decay or by violence, of their slender nook-shafts; the arch moulding which was made apparently to rest on them, remaining, nevertheless, perfectly unaffected by the removal of them.

It must be remembered that in their working the column as an integral part of the wall behind it, as is, I believe, invariably done at the Colosseum, a considerable amount of extra labor and some loss of material was incurred by thus sinking the circular shaft out of the solid block—a labor and waste, however, which appear never to have been heeded when the perfect stability of the work was in question. These columns, thus constructed, act strictly and effectively as buttresses, giving great lateral support, whilst they so largely contribute to the ornamentation of the structure.

In like manner we see the vast blocks of stone forming the entablatures tailed into and bonding with the rest of the masonry,—not merely laid upon the pillars to convey the idea of construction, but really forming an essential part of the wall masonry.

It is indeed very manifest that extreme durability was ever a foremost consideration in the mind of those able Roman masons. A curious instance of this feeling occurs in the construction of the steps of the numerous public staircases. Being open, and therefore constantly exposed to the weather, it is obvious that had the steps been simply laid on each other in the usual way now-a-days, the wet would have been liable to penetrate or be driven through the joints, and so, in the course of years, the gradual but constant penetration of wet would have injuriously affected the vaults and arches beneath on which these steps were laid. To prevent this a very ingenious and, I should imagine, a very effectual contrivance was devised, consisting of a sinking cut into the face of the tread where the riser of the step heels upon the tread of the step beneath it, which sinking, as M. Paris very satisfactorily shows, was made to receive a covering, or what workmen call a listing, of mastic or cement of some kind, well calculated effectually to exclude wet.

I must, however, no longer dwell on these practical subjects, which might be multiplied to almost any extent, all tending to prove that there were master-minds among the builders of Rome as well as among its military and political chiefs. Although this wonderful building now presents to our view little more than a vast mass of bare masonry and brickwork, deformed by time and by barbaric depredations, it is not to be doubted that its internal embellishment was as gorgeous as might be expected from Roman builders who were so addicted to magnificence, and who might be supposed to be especially lavish in the adornment of this, the most highly favored centre of attraction to the pleasure-loving citizens of Rome. M. Paris furnishes us with careful drawings of fragments of ornamental details which fully confirm this supposition; minutely enriched stucco linings appear to have decorated the interior of the halls and corridors, and notwithstanding the ravages that these ruins have for ages been subjected to in the search for precious marbles, fragments of fluted columns yet survive of richly colored marbles, carved most elaborately. The extent to which this elaboration was carried may be in some measure inferred from the immense amount of labor bestowed upon so subordinate a detail as the fluting of the shafts of the marble pillars.

It should, however, be observed, in justice to the architects of the Colosseum, that the somewhat excessive extent of minute decoration, as indicated by the few surviving specimens, is confined to the interior; whereas the exterior, both in the constructive features and in the details, is remarkable for general simplicity.

In this building, as in most of the Roman monuments of the best period, a greatness of manner eminently distinguishes its exterior architecture, a circumstance well worthy of your note in the proneness to crowded ornamentation at the present day so prevalent. Without going back to remoter and simpler times, we shall, indeed, find that in Roman art in its best and purest days, and in Mediæval art at the justly applauded epoch of the thirteenth century, and in Renaissance art at its period of freshness and beauty, when Bramante and Raffaele designed,—at all these epochs of art we shall find no vulgar, overloaded decoration, but abundant evidence of that just appreciation of the value of ornament which knows how to use it with due effect, and when it may be usefully dispensed with.

I will not dismiss this remarkable volume from your notice without noting the extraordinary dimensions of the building which it illustrates. I find the length of the major axis to be 580 feet, and of its minor axis 480 feet; whilst the height from the ground-line outside the building to the summit of the exterior wall is 160 feet. M. Paris makes an elaborate calculation of the actual number of sittings afforded by its marble benches: the result is 44,090 persons. The stories, therefore, of those (like Fontana and others) who represent the number of persons accommodated to have been 80,000, or even more, were either wild exaggerations, or it may be that this high number might have been obtained by counting the multitudes who could have been crowded into the numerous corridors, on the broad platform at the highest part of the amphitheatre, and possibly, too, on the arena itself.

I will now invite your attention to two splendid folio volumes of drawings preserved in the Royal Library, of which they form a part. The drawings are executed very carefully and cleverly in outline, slightly shadowed and tinted, upon vellum. The series comprises plans and views of the chief Royal Palaces of France, together with some original designs, by Jacques Androuet du Cerceau, one of the most eminent among the originators of the Renaissance in France, born about 1515.

These valuable and interesting drawings were made for Catherine de Medicis, and certainly formed part of the Royal Collection of France. How they subsequently became transferred to their present place on the shelves of our great public library is not recorded.

It is not my intention to particularise all the buildings represented in these

volumes; indeed, so rich was the French crown in Châteaux and Maisons de Plaisance in the sixteenth and seventeenth centuries, that it would extend my notice far beyond its proper limits were I to do so. All the earlier examples are characteristic of the transitional period when they were erected. In plan they retain much of the type of a medieval fortification; and this may have been probably occasioned in some cases by the erection of the palaces on the foundations of some more ancient castles of a strictly military character. But there are few that retain any provisions whatever for active defence; the bastions become clusters of embowed windows, enriched with many architectural embellishments, and the intervening curtains are occupied entirely by wide windows, lofty chimneys, and other features of domestic architecture, to the exclusion of the loop-holes and frowning machicolations of the preceding ages. Those highly picturesque buildings, the Château de Chambourg and that of St. Germain au Lage, for example, are buildings of this mixed character. They are described as Bâtimens de Plaisance, and present throughout the evidence of their having been built for agreeable residences; whilst, on the contrary, the plan alone of these buildings would convey the idea of a strictly fortified place, with moat and drawbridge, and like appendages.

The Châteaux of Blois and of Amboise are interesting examples of this picturesque, transitional style, one of the prominent features of which is the very steep and conical roof, enriched by most elaborate cresting and finials, the latter rising often to a considerable height, sometimes of metal, and sometimes executed in glazed and colored terra cotta.

The variety imparted by these means to the sky-lines of the roofs is one of the chief sources of the picturesque in the buildings of this date in the North of Europe. It is worthy of note that at the Château Amboise, the chapel, which is conspicuous in the group of domestic buildings which compose the château, is strictly Gothic in general outline as well as in its details, having lofty and slender pinnacles and buttresses, and traceried windows, whilst, as I have stated, every other part of the palace is in that particular phase of the Renaissance which prevailed in France after the general discontinuance of the Gothic manner. This distinction would seem to indicate that a sense was felt of the propriety of adopting for ecclesiastical buildings a character of architecture differing from that employed in designing domestic buildings.

I have on a former occasion expressed my opinion that such a distinction seems not unfounded in reason and good sense. To adopt a strictly medieval style of design in all its purity and completeness in the erection of a domestic building—a private residence, for example, where all the luxurious requirements and refinements of modern social life are necessarily to be expected—is a task full of embarrassment and difficulty to the architect, necessitating frequent departure from ancient types; whilst, on the other hand, the medieval style lends itself with great facility to the construction of a church or chapel in its familiar form, and with its necessary adjuncts.

There seems indeed a moral, as well as æsthetic, propriety in thus setting apart a special style to buildings of a sacred character, visibly distinguishing it from a building erected for domestic and, as it were, vulgar uses,—a distinction analogous to that which led the Egyptians to preserve an hieratic character in their sacred writing, as well as in their sacred architecture, long after classic forms and demotic alphabets had become familiar to them. I may add, with reference to this example at Amboise, that there are no indications whatever to justify a supposition that this Gothic chapel is not coeval with the surrounding buildings of the château, which are, as I have said, of a perfectly renaissance aspect.

The Château Valéri, which is in the same early French style, is particularly notable for the boldness and vigor with which it is designed—a manner so broad and forcible as to well merit the character of grandeur.

The Château de Montargis is an example of great interest, having less of the Renaissance element in its style of architecture. The sectional views convey an excellent idea of the interior of the château as it appeared at the time of Catherine de Medicis. The capacious chimney-breast in the great hall is especially observable, as characteristic of the style of the period. On the front of this chimney-breast is represented, in sculptural relief, the romantic story, which tradition has handed down, of the faithful "Dog of Montargis," who avenged the death of his master; to quote the somewhat quaint old French phraseology in which the volume adverts to the legend, it describes the subject of the sculpture as "L'histoire digne de memoire d'un combat d'un gentilhomme contre un chien, lequel gentilhomme, étant vaincre par le chien, confessé avoir tué son compagnon, maître du celluy chien."

This practice of sculpturing or painting some family legend, or other interesting historical incident, over the huge chimney-piece, round which the members and retainers of a family were habitually assembled, seems agreeably characteristic of the habits of the time, and presents a contrast very unfavorable to the manners, and even to the taste, of the present day, when we compare these simple and, perhaps, somewhat rude, yet vigorously expressed illustrations of our social state, with the paltry ornamentation of a modern parlor, the shabby, unmeaning looking-glass and putty frame which usually usurp this place of honor in the best living room of our modern dwelling-houses. The chimney-pieces or fireplaces themselves suggest similar observations. In the case before us of the great hall of the Château Montargis, the chimney-piece, as represented in this book, is typical of that feature in all the great halls of the fifteenth, sixteenth and seventeenth centuries throughout Europe. A great canopy or hood advances forward, overhauling a hearth capacious enough for the combustion of fuel sufficient to warm the whole household collectively. This overhanging chimney-breast is not usually carried by the projecting piers of solid masonry or brickwork, which, now-a-days, generally limit greatly the radiation of heat, and send it up the chimney rather than into the room. The breast, on the contrary, is usually carried by pillars or other carved supports attached to the wall, and ornamenting as well as supporting the hood which is to carry off the smoke; at the same time projecting so moderately, and occupying comparatively so small a space, as to cause very little obstruction to the radiation of warmth.

No doubt these rude contrivances may not be always very effectual in carrying off the smoke, but it may well be questioned whether a little smoke was not more than compensated for by the genial embrace which these old fireplaces offered to the whole social circle. Besides, let us candidly admit, with all the unsocial contractions which modern science has engendered, are we not still occasionally a little troubled by smoke?—smoke, without any compensating beauty, and for which we get nothing in return but damaged furniture and, perchance, a ruffled temper.*

* To be continued.

MR. DIGBY WYATT ON THE ARTS IN ITALY.*

VERY recently a programme has been put forth, inviting designs from Italian and other artists, for completing the façade of the Cathedral at Florence. The greatest praise is due to the Italians for their earnest desire to remedy so great a blot as the incomplete state of this façade has always been to that noble building, Santa Maria del Fiore, the master-piece of Arnolfo di Lapo and Brunelleschi.

In the Exhibition, under the head of "Building Materials and Contrivances," but little was worthy of remark, with the exception of the terra cotta, which was, generally speaking, very good, more especially in the article of stoves, and vases for garden decoration. There are some successful imitations of the works of Luca della Robbia, as well as of the glazed and colored tiles attributed to Girolamo della Robbia. To these we shall, however, return under the head of "Ceramics." There are some interesting collections of marbles and building stones, and some very excellent scagliola. No less than four exhibitors received prizes for the production of hydraulic cements—an article, until recently, despite their Pozzolana, scarcely manufactured in Italy. An imitation of marble, made with cements of this description, and admirably colored, has been perfected by the Marchese Campana, of Naples, and several specimens of his skill have been purchased for the South Kensington Museum. A manufactory of parquetry, on the Swiss system, has been lately established at Florence, and very fair specimens of flooring are exhibited.

Of decorative painting as applied to architecture, I observed no specimens in the Exhibition, but in the streets and houses quite enough to assure me that very great dexterity was common among men little raised above the class of ordinary house painters.

For more elaborate decorations, we know, from the skill of Signor Abbate, the decorator of the Pompeian House in the Crystal Palace, in this country, how readily competent decorators may be found; and it would, I think, require very acute observation on the part of any one inspecting the old arabesques by Pierino del Vago, in the Villa Doria, at Genoa, and the grotesques executed in the same building, by Annibale Angiolino, of Perugia, now living, to distinguish between the old and modern work.

Of the architectural designs in the Exhibition I am sorry to be unable to speak in laudatory terms. The most industrious amongst the artists appear to be Niccolò Bregaglia and Pasilio Rosati, of Naples, who produce many drawings of architectural fragments and restorations from Pompeii, executed in the French Academic style. In the remainder there is but little merit, although in water color drawings there is evidence of considerable command over the delineation of architectural form.

To say that the spirit of Canova is yet dead in Italy would be incorrect; but one is happy to recognise that, while much of his effeminacy and artificial composition is disappearing, much of his beauty of form and delicate finish in marble working is satisfactorily preserved. The care he bestowed in modelling the articulations of limbs, and the extremities generally, is rivalled in most of the best works now exhibited, although some few, otherwise excellent, fail in those important details.

The work which has attracted most attention, and with good reason, is the well-imagined and gracefully carried-out figure of "A Girl Reading," by Pietro Magni, of Milan. That sculptor, with Strazza (the author of the "Ishmael," in the Exhibition of 1851), and Vela, of Milan, an artist of great talent, may be looked upon as leading representatives of the Romantic school of sculpture in Italy, as opposed to the more Academic style, which finds its ablest representatives in Cambi, Santarelli, Costoli, and Fantacchiotti.

Dupre, of Florence, a sculptor of very great power, partakes of the merits of both classes, but falls slightly, in some of his works, into that leading defect of inattention to pure beauty of form with which the Romantists, in aiming at expression rather than the "beau idéal," may be occasionally reproached.

The most absolutely Canovesque of sculptors is, apparently, De Fabris (lately deceased), whose "Love and Psyche" is one of the honeyed but feeble reminiscences of the subject so dearly loved by his master, the father of modern Italian sculpture.

It is to be regretted that Tenerani, of Rome, Canova's favorite Italian pupil, has not contributed to this Exhibition, since his great powers would have gone far to vindicate the school of that really fine artist, under whose influence Tenerani's best works have been produced.

The principles upon which I believe the popularity of Magni's statue of the "Girl Reading" is founded, appear to me so important, and, indeed, so novel in their application to modern sculpture, that I think it my duty to dwell for a few minutes upon them. A maiden, of no great pretensions to beauty, either of form or feature, and in the simplest dress, is represented, seated on a common rustic chair, reading. There is no very great study evidenced in the arrangement of the lines either of the figure or of the draperies, and, indeed, in one important particular, the modelling of a portion of the bosom, a manifest defect is to be observed. The head is very truthfully modelled, and the expression is one of quiet concentration on the theme of the volume, in the study of which the reader's whole attention seems to be absorbed; that theme being, as may naturally be imagined, at the present juncture, the development of Italian liberty under the sovereignty of Victor Emmanuel. Such elements may not in description, perhaps, appear likely to result in the production of a striking work of art; and yet the power of this small statue is such as to arrest and enchain the attention of every one coming within sight of it.

The potency of the spell I believe to mainly consist in the concentration of purpose manifested in the whole composition. There is no straining for effect—to borrow a theatrical phrase, "no playing to the footlights"—and none of that coquetry, half-conscious of nudity, and evident flirting of the damsel with the spectator, which disfigure so many ordinary representations of female form. Other charms are unquestionably the ease, nature, and simplicity of the whole arrangement. Nothing is allowed to interfere with the tranquillity of the action, and such is the effect of this appearance of quiet that almost instinctively the spectator treads, as he passes, with lighter foot, and speaks in "bated breath," lest he may startle the marble maiden who sits wrapt in her brooding fancies, as it were, unconsciously before him. A second of Magni's works, "An Indian Mother," seated in a shawl swung over the branches of some trees, in such a manner as to make the figure appear entirely unsupported, is a *tour de force* in marble working, the slight tendency to extravagance in which is to be overlooked in the elegance of the action and the careful modelling of every portion.

A third work, by the same sculptor, is of considerably less merit. It repre-

* Continued from page 58.

sents a statue of Socrates; and, whether intentionally or not on the part of the artist, conveys an almost instinctive reminiscence of what one cannot but fancy the sovereign of United Italy himself might be with little else upon him than a rather scanty shirt. The compliment, if it be meant for one, is indeed somewhat dubious.

Vela, another Milanese, contributes one figure only, and that of an almost too voluptuous east of beauty and attitude—"Spring," a nymph bounding upwards, but, as it were, caught, and entangled in the vernal flowers from which she seems to be rising. In delicacy of modelling, and that truthful rendering of flesh in marble, which the Italians term *moribondezza*, there is nothing, I think, in the whole Exhibition to equal it. It is to be regretted that other works of Vela's are not to be found at Florence.

The most ambitious figure is certainly the "Daughter of Zion in her desolation," by Morelli, of Leghorn; but in aiming at grandeur the sculptor has neglected beauty, and thus fails to engage the sympathies of the spectator.

Fantachiotti, of Florence, who enjoys a great and deserved local reputation, exhibits several works of very considerable merit, the best being the monument to the late wife of Mr. Spence, an English artist, long resident at Florence. The figure, which is that of a very beautiful matron, is represented as extended, after the manner of some of the finest of the cinque-cento monuments, on a bier, recalling, in many particulars, the general form of the ancient sarcophagus. In front are amorini, and beneath square tablets, inserted, as it were, in a plain and well-designed pedestal. The special merit of this work is two-fold. In the first place, all that may be called pure sculpture,—that is the representation of the human form, and the draperies and ornaments connected with it—is thoroughly good; and in the second, these elements are combined with such conventional lines, masses, and ornaments, as adapt the whole composition for alliance with whatever may happen to be the architectural forms of the structure in which this beautiful work may be destined to be placed. What the consequences of the common want of skill in similar combinations may be, it is scarcely necessary to point out to an audience whose remembrances of St. Paul's and Westminster Abbey would, probably, be too poignant for me to do more now than hint at them.

Strazza, whose "Ismael" in the Exhibition of 1851, and whose "Audace" in the Crystal Palace, have made us well acquainted with his capabilities, fails to sustain them at Florence in his statue of the "Sposa Novella," which has, however, received the compliment of purchase by the King. Neither strikingly beautiful nor very expressive of its title, the modesty of the recent bride seems rather of that affected class, the freedom from which I have already commended in Magni's masterpiece.

Santaroli, of Florence, a well-known artist, exhibits a "Shepherd Boy," which has merit, but his "Magdalen" is too close a reminiscence of that of Canova, and fails to sit up comfortably. The infant's "Prayer of Innocence" is offered up rather by a little man than by a true bambino.

The same reproach as to want of truthfulness in form may be applied to the "Amore Mendicante" of Cambi, the general intention and action of which, however, is clever and expressive. The same sculptor's "Eve" recalls far too much and too many of the leading defects of our English Academician Bailey.

Pierrotti, of Milan, exposes a very good anatomical study, in the shape of "A Hunter killed by a Snake." The subject is a difficult one, and has been well mastered by the skill and knowledge of the artist.

In the true academic style, Costoli's "Death of Menecæus" is to be highly commended, as being thoroughly well modelled, and well balanced in a difficult pose. His "Charity," a large bas-relief, is by no means so good.

Dupré shows a "Mater Dolorosa," the character of which is sublime and devotional in a high degree. He has also a "Sappho," in an attitude not altogether dissimilar to, although in no way plagiarised from, that of the well-known work of Pradier; and a sculptured pedestal for, apparently, a large flower basin. The modelling and composition of the figures in alto-relievo which decorate the latter, it is no small praise to say, are, I consider, fully equal to those we so much admired in Professor Drake's pedestal in the Great Exhibition of 1851—a somewhat similar work. The attitude and expression of the "Sappho" and the draperies are admirable; but some portions of the nude have been modelled from rather too low a type of female beauty to be altogether satisfactory in a work of ideal art.

Admitted into the fellowship, if not the nationality, of Italian sculptors, are the well-known American and English artists, Power and Fuller. The "Greek Slave," and "Youth holding a Shell," the "Proserpine" and admirable busts of the former, are too well known in this country to need dwelling upon; but with his "America" we are not so well acquainted. Unlike the life and vivacity of that population, whose every breath it appears must be drawn in an atmosphere of sensation, and whose vital energies seem inexhaustible, the embodiment of the sublimated essence of modern republics is tame and dead; but, like at least the major section of that unhappy continent, she stands but feebly and tottering, and one touch only seems wanting to overthrow the unstable goddess.

By the latter artist (Captain Fuller), there is a remarkably good figure of a "Drowning Boy," admirably modelled, and full of energetic action. The tempest-tossed sailor lad still struggles, though evidently unavailing, with the elements which overpower him.

This scanty list by no means exhausts the excellences, or perhaps rightly points to the salient defects, of the really fine collection of works of sculpture, which it is not too much to say formed the leading feature of the Florentine Exhibition; but I feel that it is necessary to quit the field of pure sculpture for that application of the art which lends its highest graces to industrial production.

The two most distinguished workers in this department of industry, worthy maintainers of the fame Brustolone acquired for Italian wood-carving in the last century, are well known in this country—Barbetti and Pietro Cheloni, of Florence.

The former exhibits a grand door, carved with no less than 29 alto-reliefs of Biblical subjects, treated somewhat after the manner of the celebrated gates of Ghiberti. Unlike them, however, the sculptures under notice have been executed in walnut wood, as a commission for Prince Demidoff, for the entrance door to whose Russian chapel at San Donato, near Florence, they are intended. The general design is, it appears to me, monotonous, from its extreme rectangularity, and is ill-arranged in the junctions of the vertical and horizontal divisions with the semicircular head of the door. The carving is, however, executed in so masterly a style as to constrain an admiration for the details which fails to be excited by the general aspect of the whole.

The same artist contributes a large oak bench, the seat of which is hinged in order that the lower part may answer the purpose of the *cassapanca*, which formed so lending a feature in the Italian interiors of the quattro and cinquecento periods. In general design this work is better than the door just referred to, and leaves behind a feeling of more entire satisfaction.

The capability for the most important works, shown by these productions, is shortly destined to be put to an even loftier purpose, since Barbetti and his sons are now engaged in the execution of a magnificent case, 6 feet 6 inches high, entirely wrought in ivory and ebony, to hold the National Crown of Italy. Of this most important work a full-sized water-color drawing was exhibited, and I fully believe that the realisation of the design (which is exceedingly good) will be not unworthy of the ancient glories of Italian ornamental carving.

Cheloni works in a manner which very perfectly reproduces the delicate work of Mino da Pisevole civitale da Lucca and Andrea Ferrucci, and proves that, with judicious encouragement, he may become a formidable rival to the most distinguished amongst the Parisian magnates in the production of luxurious furniture. His bookcase—and above all, a single little panel in wood, fully justifies this assertion. It is to be hoped that this fine bookcase, as well as the ease for containing the national crown, by Barbetti, may form ornaments in our Exhibition next year, where they cannot fail, I think, to be greatly admired.

The only rivals, although there are, of course, many approaching the excellence of Barbetti and Cheloni in ornamental carving, are Antonio Superchi, of Parma, and Professor Giusti, of Sienna. The former exhibits only a small panel, carved in soft wood, with arabesque ornament. It is, however, a masterpiece. The latter works in ivory, and appears to be well supported by English patronage, since his miniature reproduction of the celebrated Fountain of Jacopo della Quercia at Sienna, and his exquisite little picture frame, have been produced, the former for the Earl of Northesk, and the latter for the Marquis of Northampton. For the Count Agostino da Gori Giusti he has wrought a little coffer or box to contain autographs of men of science, artists, poets, &c. The shrine is by no means unworthy of the relics.

Time will not permit of my dwelling at greater length upon individual specimens, or even extending my catalogue of ingenious artists. It may suffice to say, briefly, that in marble, stone, ivory, ebony, and plastic compositions, the application of sculpture to industry forms, probably, the most distinguished feature of the industrial portion of the Florentine Exhibition.

It would be unfair to the Italians to pass from the subject of applied sculpture, without noticing one form of it in which, from classical times to the present, they have maintained a decided pre-eminence over other nations. I allude to the art of working in gems and precious stones.

The names of Girometti and Odelli of Rome, are celebrated, and their productions still command very high prices, in proportion, perhaps, to the labor, but too great for the art displayed; as, for instance, the single cameo of Signor Girometti is valued at no less than 30,000 francs, or £1,200, a price, possibly, as the Italians say, "da combinarsi." Neither of these artists, in my judgment, sustains his previously acquired reputation, while the intaglios of Berini of Milan, a less known man, are, if not so valuable, far more agreeable, being both designed and wrought in better taste, and rather reproducing Grecian than ancient Roman styles of execution.

The old celebrity of Valerio Vicenti for the execution of intaglios in crystal, resting not only on the warm tribute of admiration paid to his genius by Vasari, but on exquisite relics of his skill still preserved at Naples, Rome, and Florence, has excited the noble emulation of Beltrami, of Cremona, a very beautiful specimen of whose handicraft is exhibited by the Brothers Turina. I believe Beltrami to be no longer living.

The medallie art of Italy, so famous of old through the dies cut by Cellini, Bastiano Cennini, and others, is well sustained in the present day, and the specimens furnished by the mints of Florence and Rome show that their ancient dexterity has not entirely deserted their descendants.

Before altogether quitting the fine arts, there are some forms in which they appear so closely allied to industrial art, and in their alliance so little modified, as to demand notice, before proceeding to a consideration of those industries, the types and constitution of which are affected comparatively remotely by the three fine arts. I class in the former of these categories engraving, lithography, chromo-lithography, and photography.

From the days of Mare, Antonio Raimondi, through those of Volpato and Raphael Morghen, to modern times, rendered illustrious by the names of Peretti, Jesi, and Tosehi, the Italian school of line engraving has maintained an almost unquestioned pre-eminence over its contemporaries of the rest of Europe. That great work, the engraving of the Frescoes of Correggio at Parma, upon which all the later years of Toschi's life were employed, contributed to the education of a generation of engravers, many of whose works are fully worthy of their cultivated master.

The basis of all excellence in this art is, of course, the perfection of what is known as the engraver's drawing—in other words, his rendering in *chiaroscuro* (of the exact size of the plate proposed to be produced) of the picture selected for reproduction on steel or copper. In this art the Italians have greatly excelled, and do so still, since it would be scarcely possible in this way to surpass such a drawing, for instance, as that by Calamatta of Raffaele's "Madonna di Foligno."

For perfection in soft and fleshy modelling the palm must, I think, unquestionably be given to Tosehi, for his print of the Madonna della Scala, by Correggio; and Tommaso Aloysio Juvars, the leader of the Neapolitan school, several of whose minor specimens are of extraordinary excellence, must, I think, be placed next in order of merit.

Of Toschi's old assistants on the Parmesan Correggios, Peretti of Florence, Scotto of Genoa, and Calamatta of Civita Vecchia, many agreeable specimens are exhibited; and the print of the Madonna della Seggiola, by the first-named, is worthy of high commendation.

A work now in progress on the gallery at Florence, and most creditable as a current Italian publication, appears to have given employment to many of the best contemporary engravers, and beautiful plates as well as engraver's drawings for this work are exhibited by Ulisse Forni, Federico Calendi, and Agostino Tricca.

I cannot leave the subject of Italian engraving without noticing the extraordinary pen-and-ink drawings by Professor Vincenzo Gazzotto of Padua. On three large sheets this artist has depicted, in a most masterly manner, the "Joys of Paradise," the "Sufferings of Purgatory," and the "Despair of Hell." Not only are these compositions highly imaginative—in this respect rivaling the

analogous works of our own Martin—but they are drawn with a masterly knowledge of light and shade, fore-shortening, and of the human figure. The drawing of Paradise is exceedingly beautiful.

In chalk and ink lithography, a fair average is maintained by the houses of Richter, of Naples; Carpentier, of Florence; and Borzino, of Milan; while in chromo-lithography they may safely be put in comparison in quality, if not in quantity of production, with the larger establishments of Paris, Vienna, Berlin, and London.

By the first-named house two works are exhibited, the execution of which is eminently honorable to Italy at the present time. One of these is a perfect series of illustrations of the painted decorations of Pompeii, published by Nicolini, being for the most part *fac-similes* of the beautiful drawings of Abbate. The other is an equally fine series of illustrations of the Abbey of Momeale, near Palermo. The latter work has been produced mainly through the energies of the Benedictine Fathers of the Abbey, under the able leadership of the Padre Gravina. For those who would seek to revive the manufacture of pictorial mosaics in this country—and, happily, they are now many—no more useful work can be recommended than this, in which the glories of the celebrated Norman Cathedral are admirably reproduced in all their details. Borzino's imitations of oil pictures are all but deceptive; while Carpentier produces, at very reasonable prices, excellent colored *souvenirs* of the most beautiful pictures of Fra Angelico and other masters.

The illuminator's art is so nearly allied to the art of chromo-lithography, that I may consider this to be the fittest place to notice the evidence given by Napoleone Verga of Perugia, that the traditional skill of the Italians in "quell'arte che alluminare e chiamata a Parisi," from the days of Dante to the end of the last century, has not been lost. In his illuminated addresses from the municipality to the Marchese Pepoli, Verga shows himself, if somewhat inferior to Giulio Clevio, Buonfratelli, and Girolamo dai Libri, superior to almost all other ancient magnates in the art of illumination on vellum.

As connected also with chromo-lithography, may be noticed the art of color-printing by means of typography (*alluminare e chiamata*), that is, from type or brass plate. Of this some good specimens were shown by Federico Lao.

Raffaello Salari, of Florence, contributed fac-similes, executed with the pen, of ancient block and other early printing and wood-cut illustrations, fully sufficient to deceive any eyes but those of the most accomplished bibliomaniacs, their perfection equalling, if not exceeding, that of our justly-celebrated Harris, whose works created so much sensation among the learned in rare editions and tall copies in 1851.

In photography the names of Ponte of Venice, Alinari of Florence, and Dovizielli of Rome, are well known in this country as connected with very perfect reproductions of the most striking architectural monuments of those cities. It may be enough to say that they ably sustain their reputation amidst rivals whose excellence brings them within a few paces of the foremost in the race. Daroni of Milan, exhibits a full-length life-size figure of the king, in its way a triumph over very great difficulties. A less favorable subject, however, for such an experiment could hardly have been selected. Caldesi's reproductions of the Hampton Court cartoons are too well known to need commendation from me.

In metallic art there was not much to notice, since none of the branches of that class of industry were very largely represented.

In the precious metals much more design and ingenuity were displayed than—with one or two exceptions, to be presently mentioned—appear in productions in the baser metals. I am unable to praise the silversmiths' work generally, since the Italians as yet do not appear to have fully appreciated the ancient styles of finish of their own forefathers, or even those of the Wagners, Froment-Meurices, Morels, and Vechtes, of the past and present generations in other countries. The best works of this kind, where little was really good, appeared to be the vase designed and executed by Tomase Rinaldi of Modena, and the sword of honor presented to the King by the citizens of Modena, and executed by Rinzi, of Milan. The steel blade of the latter, which was cleverly inlaid with gold and silver, showed that the whole art of working *all'azzimina*, or damascening, in which Cellini so greatly excelled, is not lost in Italy.

A still nobler sword than this, as far as material is concerned, was exhibited, the work of Castellani, of Rome. The hilt was somewhat too severe in style for one wrought in gold, and did not appear to me equal in workmanship to much that I have seen elsewhere, and, indeed, in London last season, by the same distinguished jeweller. It is to be regretted that he did not contribute any other specimen of his skill on the present occasion. I must confess that I have seen in shops at Rome, Genoa, Florence, and Naples, far better jewellery than was displayed in this the first great Italian Industrial Exhibition, where so important a branch of industry should have been better represented.

In cast-iron there was little worthy of remark, with the exception of a very clever gas lantern, cast at the foundry at Pignone, near Florence.

In bronze and brass founding and chasing, I have never seen in any country better work produced than that for which Clemente Papi, of Florence, is so justly renowned; and I believe that it has puzzled those most learned in the processes of metal casting to understand by what means his extraordinary reproductions of groups of natural flowers have been made out of molten metal.

In wrought-iron, for which I need scarcely remind you that Florence and Siena were formerly most celebrated, Pasquale Franchi, and Benedetto Zalaffi (both of the latter city), exhibit themselves as truly cunning smiths. The former has produced a small pair of gates, in which the vine, the olive, and groups of corn, become admirable ornaments to a well arranged series of conventional lines and ferns; while the latter sends some iron rings and brackets, similar to those formerly attached to the old palaces of Italy. These are all wrought with hammers and punches, with such freedom and spirit as to be likely enough to deceive enthusiastic purchasers who may be unable to refrain from attempting to carry off trophies of the former glories of those nobles, in whose families the right was alone hereditary to attach such marks of nobility to the head-quarters of their race.

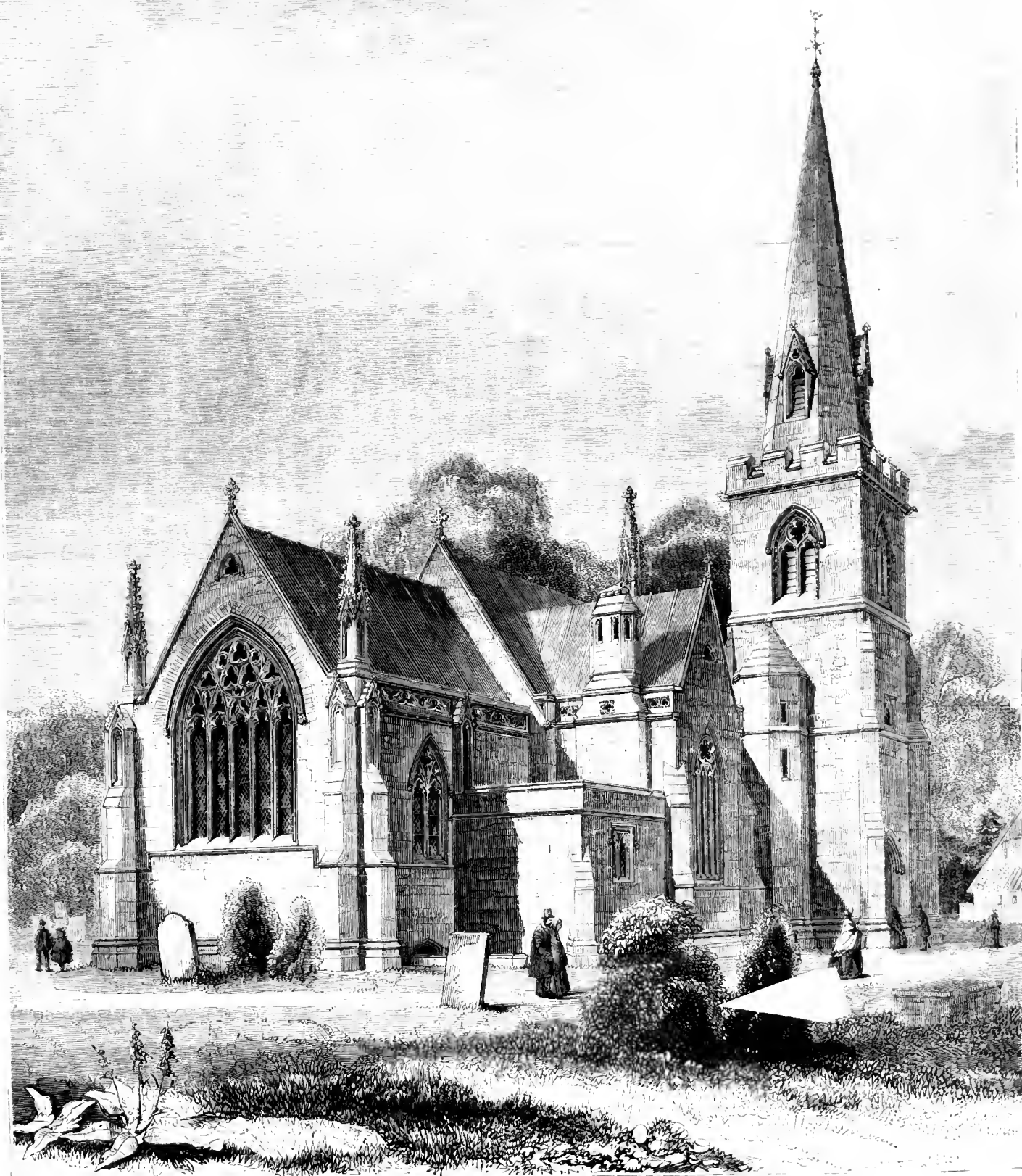
In pierced steel-work the cutlery of Campo Basso, the only place in Italy in which much cutlery is manufactured, exhibit considerable dexterity, and the pierced scissors of Vinditte Terzano are elegant, both in design and execution. One singular pair of desk scissors, highly and pleasingly ornamented, bore the singular inscription, in incised characters, "Scipione Santangelo, al municipio di Firenze;" the gift recalling the good old days of Florence, when nothing was deemed too precious to be offered out of the tradesman's abundance to his well-loved home and city.*

ON THE SANITARY CONDITION OF THE DWELLINGS OF THE OPERATIVE CLASSES OF EDINBURGH.*

THE College transmitted the foregoing suggestions, with the apparently necessary recommendation that they be carried into effect with all convenient speed. Earlier than this, however, the Privy Council, moved by the fact that the town "is now become so filthy and unclean, and the streets, vennells, wynds, and closes thereof so overlaid and covered with middings, &c., that the Councillors are resolved to leave their lodgings," as "they cannot have a clean and free passage and entry to them," "nor to abide the sight of this shameful uncleanness and filthiness." The remedy suggested was to hold every householder responsible for the purity of the part in front of his own, as is now done in regard to the snow. Again, in 1751, on the fall of an old house, a general survey of the old houses throughout the city was made, and many of them were condemned and destroyed. The erection of George-square to the south, and of the streets and squares of the New Town, on the north, led to the removal of the wealthier inhabitants, and the abandonment of the Old Town, with its upright streets (*Scottie*, stairs), to the class who now occupy it, and in whose occupancy it has assumed its present barbarous and disgraceful condition. What do we find when we examine? Closes varying from $\frac{1}{2}$ to 1 foot in width, as they taper in some instances to meet at the top, seven and eight stories high; their causewayed surfaces, reeking with every kind of filth, are the only entrances by which light and air can find their way to the dwellers in these awful dens. Add to this the fact that some of these houses, once the residences of our nobility, have large rooms of goodly pretensions. These, however, would not pay, so they are divided by wooden partitions into family apartments, a few feet square. These inner cages have no direct communication even with that medium of light and air which finds its way through the narrow close. The old window of the ancient room is still left, the glass probably all gone, but all the light admitted to the inner dens comes through that window across a passage, and then through a square hole cut in the partition, so that I assert, without fear of contradiction, that when it was broad daylight outside I could not see my hand held at arm's length before me in many of these houses, which were solely dependent on such borrowed light. Again, many of these houses are of very old date indeed. One in Dickson's-close, which I examined, is described by Wilson ("Memorials of Edinburgh") "as a neat and very substantial stone edifice, evidently the work of Robert Mylne, and built about the period of the Reformation." Here was the residence of David Allan, "our Scottish Hogarth," as he was called, and who in 1788 gave lessons in drawing in this very house at the rate of one guinea per month for three lessons a week, terms which shew the wealthy character of his pupils. One small room in this house, not 12 feet wide, has a gradient of 9½ inches from front to back, a great crack extends through the wall, the lintels of the doorways are all cracked, the doors have been repeatedly stripped to make them fit. I produce a bit of one of the beams, which crumbles between your fingers like snuff. It seems to be imagined that the materials of which our houses are constructed are exempt from the universal law of decay, and that, once built, they should stand for ever. Often, when thoroughly unsafe, they give no sign of their utter rottenness. I visited one in another part of the town which had been purchased for, and was being adapted to, a particular purpose. A substantial-looking tenement it was, with walls 4 feet in thickness. The architect who planned the alterations fortunately caused the main beam supporting the roof to be examined; it was utterly rotten. I show you a piece of it; at its junction with the wall it had given way (the place, I believe, where such accidents usually occur), and the whole roof had to be shored up with temporary supports. A good illustration of the length of time these beams may remain in a very unsafe condition without external indications of decay was afforded in the picture gallery of Holyrood Palace. The flooring of this long room had been repeatedly repaired, and on the occasion of the annual levees given by his Grace the Commissioner, was temporarily supported from below. It was resolved, however, to new floor the whole; and on the planking being removed, the beams which had clung to instead of supporting the floor actually gave way, and three of the workmen were precipitated into the chambers below. It is more than probable, then, that many houses built about the time of the one that lately fell, or the one in Dickson's-close, likely so soon to fall, are in a similar unsafe condition. I have placed before you roughly-executed sketches of some of these houses. From being originally built to serve a different purpose, many of them are singularly ill adapted for subdivision, and peculiarly unsuited for the residence of poor families. Of this Cant's-close forms a good example. It appears, according to Wilson, to have been occupied in early times by ecclesiastical buildings in connection with the church of Crichton. Entrance to the rooms is afforded by good circular staircases, but the thin partitioned subdivisions are as comfortless as can be imagined; many of them have their light and air from borrowed lights, and in others, where the old windows have been rendered available, they are stuck in the queerest corners, as if placed designedly, so as to be of as little service as possible. Thus, this room, of which I show you a drawing, is 11 feet 10 inches by 9 feet 2 inches, its height being 8½ feet, and the window, 27 inches wide, is found in the extreme corner, protected from all extravagance in the admission of light or air by the close proximity of the wall on the other side, so there is only a clear space of 3½ feet between the two sides—narrowed in some places by projections to only 2½ feet. In another house, in Campbell's-close, the room is 15 feet 3 inches long by 7 feet 7 inches wide, and the only window, 1½ feet in width, is at the extreme corner of the room. Another peculiarity is shown in the first of these rooms; the large, deep, old-fashioned angle corner, which before the subdivision belonged to the whole apartment, has fallen to the lot of this particular room, and a hole 1 foot 2 inches wide has been cut through the solid wall at the side angle and glazed, so that the light struggles through from the back of the fire, and the eyes of the inhabitants are protected from any glare by a thick curtain of intervening smoke. In the room in the drawing this appears as an additional window; in some, I am informed, it is the only one the apartment possesses. Take another room in Cant's-close. It is formed out of a larger room by wooden partitions quite open, and its entrance closed by an ill-fitting door, there being a clear space of at least 3 inches between the door and the lintel. It has no direct communication whatever with the external air, but borrows all its light from the window of the larger room of which it forms a part, through a window 2 feet 5 inches in width. The light must first struggle into that outer window through a high close only 3½ feet wide, and then cross a passage of 5 feet before reaching the window proper of the room at all. The height of this room is 9 feet, and a family of five live in it, paying a rent of

* To be continued.

* Concluded from page 60.



CRICKET MALHERBIE CHURCH, ILMINSTER, SOMERSET.—MR. J. MOUNTFORD ALLEN, ARCHITECT.

It is the first time that the Hilltop News has been able to publish a special issue. The reason for this is that the paper has been able to secure a large number of contributions from its readers. These contributions have been of a high quality and have been of great interest to the community. The paper has been able to publish these contributions in a special issue, which is a great honor for the paper and its readers. The paper has been able to publish these contributions in a special issue, which is a great honor for the paper and its readers. The paper has been able to publish these contributions in a special issue, which is a great honor for the paper and its readers.

The Hilltop News is a weekly publication that is published by the Hilltop News Association. The paper is published in the town of Hilltop, which is located in the state of New York. The paper is published in the town of Hilltop, which is located in the state of New York. The paper is published in the town of Hilltop, which is located in the state of New York.

1s. 4d. per week, or £3 11s. 6d. per annum. There is no room for a bed by day, but at night, when the embers are raked out of the hearth, one is folded down across it. We could not see one another in this room till artificial light was obtained. The last drawing to which I direct you exhibits a transverse section of a garret in Campbell's-close. It is only 6 feet high at the highest part, and the eaves slope rapidly down. It is lighted and aired by a hole at the end about a foot square. All told us of the stifling heat of summer, but complained far more of the cold gales of winter; for the outer windows, opening on the closes outside, and only on passages within, are destitute of glass, and the old, rotten, ill-fitted partitions are utterly insufficient to keep out the external air. The rents vary from 1s. to 4s. per week; they are collected (sometimes two weeks) in advance, and a universal complaint is made of the impossibility of getting the landlords to do anything for the comfort of the tenants. The fact is, these houses are in most instances let as a whole to middlemen, many of them coarse, unfeeling men, who, charging often an advance of 20 per cent. on the rents they pay, grind the faces of the poor, and get rich on the sufferings and miseries of their fellow-creatures. Mr. Peddie, who visits a district bounded by the High Calton and North Back of Canongate on the north, New-street on the east, Canongate on the south, and Leith Wynd on the west, informs me that this district contains about 560 houses, and nearly 500 families. There are about thirty cases of two families living in one house, and about fifteen with two families in the same room. Of these houses, about 200 are good and comfortable for working people, with rents from £7 to £10. About 180 are at present in such a state as to be hurtful to the moral and physical character of the inhabitants; but, if supplied with water, and altered so as to admit a sufficient supply of light and air, they might be allowed to be inhabited—rents, from £3 to £6. Another 180 are utterly deficient in size, air, light and water, and every necessary element of health, many of them dangerous from their age and rickety condition—the rents varying from 1s. to 2s. per week. About twenty families live in damp, ill-ventilated cellars, below the surface of the street. Many other dwellings (!) of similar character were described by the speaker, who said, in conclusion, let it be remembered that these houses are utterly destitute of water or soil-pipes, and some idea of their loathsome character may be formed, and of the moral and physical degradation in which their inmates must be sunk. From such abodes you issue half-suffocated, and cease to wonder, when you analyse your feelings, and when you consider what an amount of physical depression the habitual dwelling in such an atmosphere must engender, that the gin-palace, or, worse still, the hard-ale shop, close by, is crowded to the door by eager votaries. Would I be myself better in similar circumstances is the question each may well ask himself; and as we know the influence of the surrounding moral atmosphere on the character of all, can we wonder if in such localities the moral as well as the physical life languishes, and ignorance, idleness, and immorality prevail? If you treat human beings worse than beasts, what can you expect them to become? If the object of this paper were not limited to the consideration of the sanitary condition of the dwelling-houses alone, I might proceed to show that, besides neglecting the peculiar advantages for drainage furnished by the site of our city, and besides suffering our houses to lapse into the condition which has been indicated, we have suffered the river which flows through our New Town (partly by the division of its natural waters, and partly by opening into it our drains,) to become, during a great part of the year, an open and offensive sewer. Farther, how, as if we had a prejudice against fresh air, we suffered the sewage water of the town to be diffused over about 2,000 acres of irrigated land, so that the emanations from about 37,120,000 square feet of poisonous swamp—which, if science have any truth, must be injurious to health—are carried to our dwellings by the east wind, which here blows on an average 135 days in the year, or by the west wind, which favors us with about 230 days; but on these I shall not dwell. To use professional language, I have described the disease and its symptoms, but how shall I prescribe a remedy? The case, I say, admits neither of palliatives nor restoratives. A surgical operation is essential, the diseased member must be removed—*Delenda est Carthago*. The recent calamity has aroused attention, and but one remedy has been suggested—the erection of new houses for the working-classes; but that this may be largely undertaken, it must be proved to be a safe and profitable commercial speculation. Those that have hitherto been built have paid well, because they are few in number and new, requiring as yet little outlay for repair, and all inhabited by a class of tenants much superior to those whose condition we desire to relieve. After referring to the fact that the new houses erected had done but little towards improving the condition of the Old Town, and expressing a doubt as to the efficiency of the plan proposed by the Town Council, the author continued: I think the urgency of the case imperatively calls for a Royal Commission, very small in number, as the only body calculated to meet the emergency, and we have an analogy for their appointment. In 1846, her Majesty issued a Royal Commission appointing certain gentlemen to inquire whether any or what special means may be requisite for the improvement of the health of the metropolis, and a similar body might be appointed to inquire into the house accommodation of Edinburgh. We ought to tell the Legislature plainly and strongly that the present is a state of matters which cannot be permitted to continue; that no man, for the mere sake of gain, has a right selfishly to disregard the interests of his neighbours; and that if the proprietors of such dwelling-houses are not sufficiently alive to the fact that by their culpable negligence or cupidity they are sacrificing the lives of hundreds, and casting the burden of the maintenance of hundreds more on their fellow-citizens, they must be prevented from continuing so foul a wrong, and made to understand that universally acknowledged maxim of public law—*Sic utere tuo, ut non alienum laedas*. The great lawgiver of the Israelites has given his divine sanction to such regard to the lives of others when he proclaimed, amidst the thunders of Sinai, as one of the laws of his peculiar people, "When thou buildest a new house, then thou shalt make a battlement for thy roof, that thou bring not blood upon thine house if any man fall from thence."

At the close of a discussion which followed the reading of the paper, Dr. Wood said that the health of Edinburgh was better than that of the other towns in Scotland, but it was not better than Birmingham.

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ON PUBLIC MEMORIALS.*

GOING back to the architecture of the Romans, we find that they have furnished us with the originals of another class of buildings sometimes used for this purpose, but not, upon the whole, generally suited for it; although in particular positions, where such a structure is needed, it may be appropriate, and add great grandeur to entrances of parks, or towns, or other approaches: these are triumphal arches, as they are usually called; although by no means universally used for that purpose, many of them having been erected to commemorate either the original construction or an important improvement or restoration of a public road, any ruler being rightly considered a great benefactor to his people who devoted his attention to these important works. Thus we find one at Rimini, erected in honor of an important restoration of the Flaminian Way by Augustus; one at Susa, in Piedmont, to commemorate another restoration of the road there by the same emperor. When the harbor at Ancona was restored by Trajan, he erected the gateway still to be seen there, and another at Beneventum, when he repaired the Via Appia. At Pola, in Istria, another was erected for a similar purpose.

At Athens, and Antioch, in Egypt, Hadrian erected arches to commemorate what he had done for those cities by the buildings he had erected in them.

But at Rome these arches were mostly used to commemorate a triumph which had passed along the road over which they were built, or they were erected in time for the triumphal procession to pass through, and then remain as memorials of the triumph. Examples of these are that of Titus, erected to commemorate the conquest of Jerusalem, and representing in its bas-relief the spoils of the temple. The arch of Septimius Severus, which shows the addition, as was the custom in the latter days of the empire, of a smaller arch on each side for the footways; and the arch of Constantine. They were sometimes used as entrances, and also to commemorate the building of the Roman bridges erected in Italy, France, Spain, and other parts of the world, as you well know such arches have been, in consequence of the renaissance of Roman art, erected in London, in Paris, and other cities; the most recent as well as one of the finest examples is at the entrance from the country to the Ludwig Strasse, at Munich, the design of which is very good, and the group of Bavaria in her car, drawn by lions, is very suitable to its position, and effective in its outline, and its grouping being, from its facing the same direction as the front of the arch, and yet, from the spreading nature of the group sufficiently covering the whole width of the arch, a much more appropriate and graceful example of sculpture surmounting an arch than ours of the Iron Duke, which necessarily, from its form and sideway position, is singularly inappropriate.

As carrying out the very spirit of the principle of the use of these arches both for entrances and for memorials, although in a Gothic style, may be cited the Tsar Thor in the same city, it being the gate of the town, and yet its whole façade being covered with historical frescoes.

Although they can hardly be called public memorials, as, although memorials of public men, they were erected either by themselves during their lifetime or by their own families after their death, some instruction, in the spirit in which we are now getting to view the instruction to be derived from the examples of old times, may be learnt from the tombs of the older nations.

Certainly, if a lasting memorial is to be desired, something is to be learnt as to the value of stability in these erections, and of the means of obtaining it, and something of simple grandeur of effect, from the first tombs of the Egyptian Kings, the Pyramids—something of the historical value of enduring memorials in these rock-cut tombs; but from these little can be learnt of forms suitable for the purposes. From the Greeks little is to be learnt on this head, but among the tombs of the Romans are to be found many grand, and some few appropriate, forms for our purpose. Those to the Emperors and other grand personages are fine; one, however, before the empire, that of Cecilia Metella, is of a very grand and effective form,—that of a round tower about 94 feet in diameter, with a bold frieze and cornice mounted on a square base about 100 feet square. That of Augustus consisted of a circular basement about 300 feet in diameter, and about 60 feet in height, adorned with twelve large niches; above this rose a cone of earth, divided into terraces and planted with trees. Augustus laid out the grounds surrounding his tomb and planted them in gardens for public use during his lifetime. That of Hadrian, built by himself, is now the Castle of St. Angelo; its basement originally was a square about 340 feet each way, and 75 high; above this was a circular tower about 235 feet in diameter and 140 feet high: the circular part was ornamented with columns. In the age of Constantine the smaller tombs became like smaller representations of the Pantheon.

One of the illustrations in Mr. Fergusson's Handbook shows us a very singular example at St. Remi, in France, which comes more within our subject, and seems to give us a classical type of our memorial crosses. It stands on a square base decorated with bas-reliefs; the next stage is pierced with an arch on each face, with three-quarter Corinthian columns at each angle; the uppermost story consists of an open circular colonnade with a conical top. Another at Igel, near Treves, in Germany, is of a very singular form; this is a square building, ornamented with sculpture, with flat pilasters, cornice, and pediment, raised from its usual place to the level of the springing of an ogee spire, so as to resemble those church spires that are surrounded by four gables; this form very fully leads us to the consideration of another kind of memorial, which, in general outline, these last examples much resemble. There is no form in my mind so suited for public memorials as the medieval form of memorial cross; there is room and scope for sculpture of every kind in the basement; there can be bas-reliefs in the niches, subordinate figures connected with the main figure; or, if an event is recorded, the statues of the several persons principally engaged in it, while above may be the principal figure of the subject of the memorial, much protected from the weather, and the whole elegantly surmounted by a spire. A beautiful example of a structure of this kind is the Shrine Brunnen, or beautiful fountain at Nuremberg, which, again, shows a graceful combination of an architectural structure suitable for a memorial with the uses of a street drinking fountain. This is mounted on two steps, in the form of an octagon, and surrounded above the steps by rich stone railing, at the angles of which are figures on short pedestals. If a public memorial be erected in our large churches or metropolitan churches or cathedrals, by all means let such memorials be more of a tomb than that of the usual form of memorial, and, above all, let it be in the style of the building in which it is placed, and, if possible, let it be so appropriate and so carefully designed for its special place that it may appear rather as an architectural adornment, and as if the original architect of the building had placed it there himself, and not such as he, if he were living, would expel indignantly from the church, and such as many of us would much like to have a hand in helping him to do it. I need hardly say to you what was so much wanted not many years ago: never design your modern memorial so as to require the defacing, even in the slightest degree, of the older building in which it is placed.

No men have ever understood the designing of tombs and memorial effigies of the notable men of their time better than the architects and designers of the middle ages, especially as regards their suitability to the churches in which there were placed chapels may be crowded with them, and arches filled by them. Arches may be made in the walls for them, or the floors of the aisles covered with them, yet the only result is that the beauty and picturesque effect of the building have been much increased by them; for monuments like these our remarkable series of altar tombs of our kings, with their beautiful effigies in calm repose, are sufficient examples, which may be varied in treatment and detail to an almost endless degree: those at Westminster, both of kings and knights, with their beautiful canopies; those, again, of the Scala family at Verona, and that of Walter Gray at York, and the Beauchamp tomb at Warwick, are fine examples of different modes of treatment. A beautiful form of memorial for the interior of a church is a brass, but unless protected by a railing, it seems to me that the wall of the building in which it is erected is better than the pavement.

There is one mode of memorial by which architecture is a great gainer, and by the aid of the custom of using which for that purpose many a church, which would not otherwise be completed, is finished and beautified,—that is, of inserting stained glass into the windows as memorials; it is a beautiful mode of recording the person, and of, at the same time, adorning God's house. I do not think that there is anything particular to be remembered in designing these; the design may be, if possible, appropriate, but, if not possible, it does not matter. Of course the subject must be sacred. The inscriptions are generally so difficult to read, that I think it is best to insure

the memorial intentions of the window, as well as the decoration, by placing underneath a brass containing the inscription.

By all means, for the sake of the beauty of your buildings, encourage, whenever it is in your power, this beautiful mode of recording the great and good. To use a homely proverb, "two birds are killed with one stone." I would just say here what I always urge when I have the opportunity of saying anything about stained glass: let no one color predominate, and do not attempt to make a historically recording fresco out of a painted glass window, for the material will not admit of it; color is its chief and most legitimate object; leave all the rest to fresco itself.

Memorials of events seem to me to be even richer in opportunity for design than memorials of public men; for your principal sculpture, whether on a pedestal or on whatever kind of structure it may be reared, may then consist of a group, either typical or descriptive of the event, and not of a single man.

A good instance of what may be done in this way is the beautiful group of the memorial to the inventor of printing, Johan Gattenberg, which, although erected as a memorial to him, will show you what I mean, as it introduces his two companions, Faust and Schœffer, grouped on each side of the main figure. Of the beauty of this you may yourselves judge at the Crystal Palace.

I cannot conclude a paper upon this subject without alluding to the idea carried out by King Ludwig, of Bavaria, in two buildings, one at his capital, Munich, and the other at Ratibon; the one at Ratibon I have not seen, being obliged, when in Bavaria, to change my route; but the one at Munich was nearly finished when I was there in 1852. These buildings are the Walhalla, at Ratibon, and the Ruhmeshalle, or Hall of Fame, at Munich. The purpose of these buildings is to contain the statues and busts of the men who may have distinguished themselves and deserved well of their country; and I think the idea is good. And if a similar institution had been founded in our country, Westminster Abbey might have been saved many an incongruous statue.

The building at Munich stands on a considerable eminence outside the town, and consists of a long, low white marble portico of Doric columns raised on many steps; it is massive and grand looking. Although I think that had it been higher it would have been more effective; but, no doubt, when it is filled, in time, with the many busts and statues it is destined to receive, the appearance will be much enriched. In front of it is the celebrated statue of Bavaria, appropriately extending her arm to crown with a wreath which she bears in her hand her brave and illustrious sons. As the great master, from whose poetic and fertile brain this beautiful statue proceeded, did not live to see it erected on its pedestal, his honored form was, no doubt, one of the first to be erected in the Hall of Fame.

This figure of Bavaria is 54 feet high, and the pedestal is 30 feet high, making in all a height of 114 feet. The seated lion at her side is 27 feet high. The casting was a work of great difficulty: it was begun in 1844, and completed in various portions in 1848. It was placed on its pedestal and exhibited to the people on October the 9th, 1850, and you will find the ceremony pleasingly and graphically described in Miss Howitt's interesting little work, "The Art-Student in Munich."

Both Schwanthaller, the designer, and Stieglmayer, the greatest worker in bronze in Europe, who commenced the superintendence of the casting, died while the work was in progress, so that the rejoicings were in some measure clouded with sorrow.

This dedicating one building to the purpose of commemorating the great men of the country is a very good idea, and capable of great variation and extension; for, not only may a building be erected on purpose with an open portico, so that every statue added may increase and enrich the beauty of the façade, but this principle may be applied to special appropriate buildings, where the spaces for sculpture have been left, when, one after the other, statues of the eminent in the same calling or branch of public service to which the building is dedicated may, one by one, be added, greatly to the increase of the beauty of the building. Also halls might be erected, which, although containing nothing but portrait statues and busts, and commemorative bas-reliefs, would yet, if always open to the public, answer the double purpose of a hall of fame and a sculpture gallery. Likewise the same idea might be carried out with painting; a national portrait gallery, placed in a grand and suitable building, and interspersed with historical and illustrative pictures, would also serve the double purpose of a pictorial hall of fame and a picture gallery. But before quitting the subject, I must touch upon one or two essential qualities which such memorials as those of which I have been speaking ought all of them, of whatever particular form, to possess.

They ought to be poetical in conception; but in this very thing there is great care required; the idea to be conveyed, or the event to be commemorated, may be well and fitly embodied in some poetical or allegorical form; but I think I have only to ask you to think for a moment on the absurdities that from time to time have crept into our monuments through an indulgence in embodiment of classical mythology, sufficiently to warn you of the danger of this.

Although one of the most artistic monuments lately erected is that of Frederick the Great, inaugurated at Berlin in May, 1851, designed by Professor Schinkel, the architect, and Professor Rauch, the sculptor, yet some of the bas-reliefs will, I think, afford us an example to avoid in this respect as well as to emulate.

What I see to avoid will be seen in the following description of the bas-reliefs in the Hand-book to the Crystal Palace:—

1st. The first represents Frederick, who is presented by a good genius to his parents.

2nd. The Muse of History instructs him and rouses his ambition by unfolding the names and deeds of the heroes of old.

3rd. He receives his arms from Pallas.

4th. He is examining the web of a weaver of Silesia, famous for its linens.—This subject expresses his encouragement of manufacturers.

5th. He is leisurely playing the flute.—Frederick not only patronised music, but was himself an excellent performer on the flute.

6th. He is seated in his cabinet at Sans Souci, an attendant places before him the celebrated bronze statue of the praying boy, for which he paid a sum amounting to £25,000, and which is now a principal ornament of the Museum at Berlin.—This subject expresses his patronage of the fine arts; the greyhounds at his feet are also characteristic.

7th. The bas-relief at the south end represents the King seated on the column at Culmbach, and meditating on the vicissitudes of war.

8th. The bas-relief at the east represents his apotheosis, where, seated on an eagle, he is borne into the regions of immortality.—Admirable! Would that a description of any pedestal on which any of our statues are placed would need such a description, and present such a catalogue. Then the subjects; do they not, as I have endeavored to show ought always to be done, set forth the character and history of the man, from his cradle to his grave?—have we not his eminence and fame related, his early aptitude for arms forcibly depicted, showing that to be the principal occupation of his life? Then are we shown, lest we should think he was nothing but a soldier, that he not only patronised, but practised, the softer art of music—that he encouraged manufactures and the arts—that he did not thoughtlessly engage in war, and that his fame will live. Yes, truly admirable! Truly an example of what sculpture can do to render a memorial truly commemorative. Then, what is the fault, and why do I take this admirable work as an instance of the danger of mythological and allegorical sculpture? For this reason: That, with all its beauty, we have here such a medley of genies, muses, goddesses, and eagles, high boot, modern coats, waistcoats, pigtails, and cock hats, that, beautiful as the memorial is, it seems to me to say plainly to all designers of such structures, make up your mind which you will do, either let the bas-reliefs represent historical facts alone—in which case use the costumes properly belonging to the date represented—or let them be entirely poetical or allegorical.

As you all know, both a small model of the whole of this memorial and full-sized cast of the equestrian statue are in the Crystal Palace.

Recurring to the requisite qualities of memorials, they ought not only to be poetical but beautiful, and in their very nature to be beautiful they must fully combine an architectural with a sculptural character. This necessarily involves an artistic and professional difficulty—an artistic difficulty, as, at the present time, owing to the present mode of study, few, if any of us, either architects or sculptors, are capable of the twofold work of designing true work of architecture and executing, at the same time, with our own hands, the figure sculpture; the professional difficulty is, that there must be choice of either sculptors or architects. Therefore I think at the present time that the example set in the above mentioned memorial to Frederick, of two men being employed, one an eminent architect and the other an eminent sculptor, to be conjoint designers of the work, is a good one.

But I think, in this specially debatable ground between sculpture and architecture, that a completely open competition is the best means of bringing out the best suggestions and the special order of talent most needed in this class of structure; and if a design combining both the highest standard of true architectural composition to be found amongst all the designs, with the most beautiful sculpture, be the work of a sculptor, let him by all means be employed to carry out the whole of the work; but if, on the other hand, the work that most of all the designs sent in combines these two most necessary qualities be the work of an architect, let him by all means undertake the superintendence of the work, and let it be left to him to appoint what really competent sculptor he pleases to execute the sculptor's part of the work. By this test alone, applied before the selection of the memorial, and not afterwards, in the shape of criticism, can we insure for the future that completeness and perfection of design and composition, as well as well-executed figures for which our sculptors have been long justly celebrated, that those who watch the progress of art have a just right to look for in our public memorials.

ON THE ESSENTIALS OF A HEALTHY DWELLING AND THE EXTENSION OF ITS BENEFITS TO THE LABORING POPULATION.*

UNNECESSARY as it is for me to describe to you the component parts of the air, the process of its deterioration in passing through the lungs, or to dwell further upon those sources of impurity and other accessory influences in and about a dwelling which tend to vitiate the air within, it may be useful, before giving the results of my own observations on the means of obtaining efficient ventilation, that I should notice one important preliminary consideration, that of the space required to keep a healthy man in full vigor, on which very different opinions have been expressed. Experience gained in poorhouse dormitories, in prisons, &c., has led to the conclusion that from 450 to 500 cubic feet are requisite, and that the ventilation should be such as will cause an entire renewal of the air, about once in the hour. Observations made at the Model Lodging-house, in George-street, St. Giles's, which is a confined situation, satisfy me that the cubical space of 535 feet, which is provided in the dormitories of that building for each inmate, is, with proper ventilation, abundantly sufficient to render them healthy; such was proved to be the case, even when the cholera raged in the neighbourhood, and had not a single victim out of the 104 men who lodged within its walls. From this fact I think it reasonable to infer that the unhealthiness of the Wellington Barracks, Westminster, where the cubical space per man allowed in the dormitories is stated to be 500 feet, must have arisen, not from want of space, but from some other existing evils, particularly the defective ventilation, pointed out in the report made to the General Board of Health by the Commission on Warming and Ventilation.

As mistakes with regard to space tend to create imaginary difficulties, and either impede sanitary reform, or cause a serious unnecessary expenditure, I think it of use to notice two recent errors on this point which have come under my observation—one in the *Quarterly Review*, where, in an article on "Laborers' Homes," it is stated that "The Lodging-house Act requires an allowance of 700 cubic feet per person;" another in a publication by Dr. Druitt, entitled "The Health of the Parish," where it is said that "It has been decided at Bow-street that every inmate of a family ought to have 400 cubic feet of space." On inquiring at Bow-street as to the latter decision, I learned that the magistrates have no power to determine the space, and was referred to the Assistant Commissioner of Police, who informed me "that 30 feet superficial is the space allowed to each lodger in the metropolitan common lodging-houses, the rooms averaging 8 feet high, which is equal to 240 feet cube, and that 50 feet superficial is allowed to each police-constable lodged in a station or section-house, the rooms on an average being 9 feet high," which is equal to 450 cubic feet. The Poor Law Board, without laying down any fixed rule, applicable to all circumstances, adopts as a basis of calculation an allowance of 500 cubic feet for every person in sick wards, and 300 cubic feet for every healthy person in the dormitories.

Dwellings for all classes of persons, in order to their being healthy, should be so constructed as that they will be everywhere accessible to pure air, and be free from stagnation in any part; and, whilst it is obvious that the state of the surrounding air must have much influence on that within the dwelling, the renewal of the latter should always be sought from the purest source, instead of the supply being drawn, as it often is, from a low damp situation or a confined internal court.

Considered practically, the main question with regard to ventilation is in what way the air which has become vitiated can be renewed with a supply of pure fresh air without the creation of a draught injurious to health? To do this the air must enter copiously, but almost imperceptibly, and when used, or become vitiated, its exit should be both continuous and complete. Ventilation is of two kinds, natural and artificial, the former being effected by means of windows and doors, with the crevices round them, as well as by chimneys and fireplaces, which are important agents in natural ventilation, and may also, by scientific arrangements, be made conducive to an efficient system of artificial ventilation peculiarly applicable to dwelling-houses.

* Read at the Royal Institute of British Architects by HENRY ROBERTS, F.S.A. Continued from page 50.

† The space allowed in the cells of prisons should not be regarded as an absolute criterion; at the Model Prison, Pentonville, there are about 800 cubic feet.

‡ The Report of the Government Commissioners on Warming and Ventilation says, at folio 99—"Under all the circumstances, we would urgently direct the attention of the Minister at War and the Horse Guards to the absolute necessity of providing more room and accommodation for the soldier in barracks; and that instead of 500 cubic feet of space, that 700 to 800 cubic feet should be allowed per man, or, as in the case of the Wellington Barracks, that only ten persons should occupy the space allotted to sixteen; and that these regulations should be enforced as soon as extra spaces can be provided throughout the whole of the United Kingdom." In a previous part of the report, at folio 92, are found the following apposite remarks, which scarcely appear to have emanated from the same mind—"The continuous removal of impure air as it arises is of very much greater importance than the cubical contents of air in a room. In the soldiers' rooms, which are constantly occupied, the amount of cubical space can be of very little importance, for how lofty soever the rooms may be unless the heated and impure air can pass away, the space will soon be occupied by air unfit for respiration, and the greater or the less size of the room will only resolve itself into a little more or a little less time before the air is brought into an impure condition." The soldiers' rooms are about 12 feet in height; with good ventilation, this might be reduced to 11 feet or even 10 feet without disadvantage.

§ In order that the amount of space now deemed requisite in hospitals may be readily compared with the above, I quote the following:—"In solid-built hospitals the progress of the cases will betray any curtailment of space much below 1,500 cubic feet. In Paris 1,700, and in London 2,000, and even 2,500 cubic feet, are now thought advisable."—Miss Nightingale's "Notes on the Sanitary Condition of Hospitals."

In new buildings improvements may be easily adopted which are not always applicable to old buildings; but, as far as circumstances allow, they should be carried out, from a settled conviction that pure air is indispensable to a healthy state both of body and mind.

Windows properly constructed, made to open at the top as well as below, and suitably placed, afford the most ready means for the natural ventilation of dwellings, besides which are the various contrivances of *louvre*s of perforated glass, zinc, tin, &c.

Chimneys act as ventilators whenever a fire is lighted in a room: the lower stratum of air being immediately set in movement, a current of air is established from the crevices round the doors and windows, or from any other openings towards the chimney, whereby much of the vitiated air is carried off. This process of ventilation takes place in a slight degree when there is no fire in the chimney, and, therefore, bed-rooms are much more healthy with a chimney than without. It should not, however, be forgotten that a large portion of the vitiated air ascends above the chimney opening, and therefore it is essential that a provision be made for its removal thence whenever perfect ventilation is desired.

An independent supply of fresh air may be introduced into most rooms which have a fireplace, by conveying it through a pipe or channel formed under the floor or in the wall to an air-chamber constructed at the back or sides of the stove, in order that it should be there warmed before entering the room. I have seen in Edinburgh a solid fire-clay bed-room chimney-piece and grate formed so as to leave when it is set a cavity round it, which appears well adapted for this purpose. The same or a separate pipe or channel may also be used for feeding the fire with air, independent of that in the room, for this purpose it should pass out at the checks of the stove, rather than beneath the grate, which is liable to cause a diffusion of dust in the room. Such a supply of air tends to render chimney ventilating valves more certain in their action than they often are, owing generally to an insufficient draught in the chimney, which causes the emission of smoke into the room. These valves would be invaluable for the discharge of vitiated air, which is their intended purpose, were it not for this occasional ingress of smoke. The most effective means of avoiding that evil is the carrying up an independent flue in close contact with a smoke flue, constantly in use, as that from the kitchen, the air within the ventilating flue is by this means rarefied, and the action of the valve rendered more efficient. Tubular flues, of pottery, made double for this express purpose, are found to answer well, and have the advantage of occupying but little space, whilst they are not liable to the objection pointed out to me many years since by an eminent builder, who had found that cast-iron flue linings, having no mortar joints, acted as a dead space in the wall. In cases where the chimney-valve being fixed in the flue, causes an ingress of smoke, the most effectual remedy is, I believe, Dr. Arnott's smokeless grate, with the draught duly regulated by a contraction of the vacant space over the fire. These grates economise fuel considerably.

Ordinary grates, I may here remark, are alike wasteful of heat and fuel, both of which would be much economised by the substitution of a stove projecting slightly into the room, and combining the chief advantages of the one known as Dr. Arnott's ventilating stove, with the cheerful open fireplace. I have seen some such stoves in use on the Continent, and I believe that the only valid reason against their adoption in England, beyond the force of custom, is the difficulty—not, however, an insurmountable one—of applying them to fireplaces with the ornamental chimney-pieces in such general use. One of the most useful modern improvements in grates is that of forming the back and linings with fire-brick instead of iron.

The intimate connexion between warming and ventilation has led to a digression, in returning from which I remark that, in order to render natural ventilation effectual, the openings required for the escape of vitiated air should be placed either in the ceiling or near to it.* How far the admission of fresh air also in the upper part of the room be objectionable, on the ground that the air vitiated by breathing, which ascends in consequence of its relative lightness, is in that case only diluted, and not entirely replaced by pure air, remains, I believe, yet to be determined by properly conducted experiments.

With all the various contrivances and arrangements proposed for the admission of fresh, and the exit of vitiated air, unaided by those appliances which are scarcely consistent with the term natural ventilation, none have come under my observation which secure uniform action, and fully guarantee that the distinct provision made for the exit of vitiated air shall not become the medium for the ingress of cold air, on a change of temperature in the apartment, the frequent consequence of which is a draught more or less perceptible. In order to avoid this evil, various means have been adopted, according to circumstances, with varying success. The use made of chimney-shafts for this purpose has been already noticed. Tubes or shafts, of wood, of clay, or of metal, are also available, provided a constant outward current is maintained by such an application of heat as will sufficiently rarefy the air. Hot water has been, and may often be applied externally for this purpose with advantage. I have used gas enclosed within an upright shaft partly of wood, the light being placed behind a square of glass, and the air entering through perforated zinc, with a hopper enclosure; by these means the combined benefit of light and ventilation are obtained from the same quarter. In many situations this simple plan might be easily adopted, and in dwelling-houses generally I believe that gas might frequently be rendered a valuable contribution to ventilation, instead of being injurious to health. As a sunlight, with a double tube, it has been so employed with success.

The utilisation of heat from stove fires, from hot water, or from gas in ordinary use about a house, is apparently so natural and easy a means of obtaining a motive power to assist in the ventilation of dwelling-houses, that I have noticed them under the head of *natural*, rather than of *artificial* ventilation, to which I must now refer.

Artificial ventilation is ordinarily effected by the action of valves, fans, pumps, screws, furnaces, stoves, or other artificial heat, and a variety of contrivances, whereby air is either drawn out or forced into an apartment.

In the one case, the space occupied by the vitiated air, which is withdrawn, is replaced by an admission of pure fresh air; and in the other the pure air forced into the apartment causes a displacement of the vitiated air, for the escape of which due provision must be made. In both cases a just proportion between the volume of air which ought to enter and that which should be expelled is necessary; and in order that the fresh air may be adapted for use at all seasons of the year, means must be provided for warming it prior to its distribution in the apartment. The best means for effecting this is, I believe, by bringing it in contact with heated fire-brick, suitably arranged in stoves or furnaces. When heated iron is used for this purpose the air is liable to be deteriorated, or, as is commonly said, burnt. Hot water, which is similarly employed, has not this injurious effect.

Nothing can be more inconsistent with a healthy system of warming than those arrangements which provide only for raising the temperature of the air already in the apartment, vitiated as it may be. Such is mostly the case when the German hot-air stove is used, and also when hot water is circulated in pipes through the apartments; but either may be employed with impunity as an auxiliary to an open fire.

Whether suction or propulsion be preferable as a motive power, for effecting the change of air in ventilation, is a question which has been much discussed here, as well as in Paris and Brussels. After examining both systems in their practical application, the latter appears to me decidedly preferable, excepting in peculiar cases, when the power of suction may be more readily applied.

When fresh air is forced into an apartment, through suitably placed openings, it becomes more generally diffused than it does when its entrance is dependent on the withdrawal of the vitiated air by means of suction, the tendency of which is to draw the fresh air towards the point of exit, instead of leaving it to disperse and circulate freely. Suction involves the further disadvantage of setting in movement whatever noxious vapours may be within its reach.

Whilst artificial ventilation is mainly applicable to public buildings, to manufactories, and to dwelling-houses of considerable magnitude, its principles may often be adopted in numerous instances occurring in an architect's practice.

For this reason, as well as on account of the great influence which ventilation exercises on health, more has been said on this branch of my subject than some may consider necessary. I cannot, however, quit it without expressing a regret that the science of ventilation* has not been more thoroughly mastered, and its practical application more simplified than it would seem to be from the Report of the Government Commissioners on Warming and Ventilation, known doubtless to many of you, and which, with its mass of practical information appears to me to have failed in placing the subject in that clear light which was contemplated on the suggestions made by Dr. N. Arnott, in 1849, for an investigation by "a committee of eminent scientific men, comprising chemists, engineers, and physicians."

3. Having considered those circumstances in regard to a healthy dwelling which appertain to the locality, and those which are structural, it remains for me to notice very briefly "those which depend mainly, though not wholly, on the occupants themselves—external and internal cleanliness, and a proper use of structural arrangements."

The most suitable provision for rendering a dwelling dry, or for its efficient ventilation, will not secure the health of the occupants, if there be either around or within the abode an accumulation of dirt, whether in a solid or in a liquid state. Houses may, to all appearance, be very desirable dwellings, but if the drainage be out of order, or there are cesspools within their precincts, or untrapped and foul sinks, there is no safety for the inmates. Nor can the close proximity of stables be a matter of such indifference as might be supposed from the practice so prevalent in the most wealthy parts of the metropolis; for one inevitable consequence is that, in the summer, many windows which should be opened for ventilation remain closed, in order to exclude the noxious fumes of the dung-heaps.

Neglect of sanitary laws is as much manifested in the country as it is in towns, and on the Continent not less than it is in England. It would be easy to point to spots where the air is unrivalled for purity, and the scenery around of surpassing beauty; and yet such are the accumulations about the dwellings, that it is often difficult to enter the doors without wading through a stream of filth, alike offensive to the sight and to the smell. Can it be a matter of surprise if such violations of the known laws by which God regulates the health of his creatures, be visited with sickness and premature death? With equal certainty as to the issue, we may predict that those who live in close proximity to black and stagnant pools, to foul ditches, or to sluggish open drains will periodically suffer from fever or dysentery, as we do that the house in flames will be consumed if the destructive element be not extinguished, or that the neglected garden will be overrun with weeds and become a wilderness.

Internal cleanliness in the houses of the wealthy, and all that as matters of daily routine are connected therewith, including proper attention to the sinks and traps, as well as the ventilation generally, is, in the main, left to the care of servants;† and often through their ignorance, rather than their culpable neglect, the health of the family, and especially that of the younger children, is very seriously injured, without the slightest apprehension as to the cause. Many instances might be cited in proof of a fact which is calculated to arouse even the most self-indulgent, and to induce them to co-operate in such a diffusion of sanitary knowledge as will alone insure, that which is dependent on the occupants themselves, a proper use of the structural arrangements essential to a healthy dwelling. The middle classes would contribute less grudgingly than they now often do, towards the cost of public sanitary improvements, and would even urge their extension, if they were better acquainted with the laws of health, whilst a practical knowledge of such of them as relate to in-door life—whether it be that of the dwelling house, the manufactory or the workshop—would lead them duly to appreciate the advantages of cleanliness and good ventilation, and to see that their benefits were extended more generally to those bives of human industry where numbers of working people congregate for many successive hours, partly by gas.

If the want of knowledge and forethought debar many in the upper and middle walks of life the full enjoyment of a healthy dwelling, how much more is it the

* In a certain description of common rooms, ventilation may be effected by means of wooden tubes perforated with holes, or having chinks at the angles; in some cases they may be carried across the ceilings, and in others be fixed at the angles. They have also been used for admitting fresh as well as for the exit of vitiated air. These tubes distribute the air more generally, and are not so likely to be closed as either Sherringham or Hart's Ventilators, both of which are very useful in many situations. A cheap cottage ventilator may be made with a triangular piece of zinc, fixed in an upper angle of a window, and perforated in the centre with a projecting rim formed round the perforated part, in order to receive a moveable cover, which may be hinged.

* A simple test, whereby the deterioration of the air could be readily ascertained, is a great desideratum.

† The recent publication in a cheap form of Miss Nightingale's highly practical Notes on Nursing affords the means of conveying many valuable lessons on this subject to domestic servants. I have endeavoured to give some practical instruction in a lecture, entitled "Home Reform; or, what the Working Classes may do to Improve their own Dwellings."

case in regard to the laboring population, most of whom are under the further disadvantage of having scarcely any choice as to the external circumstances of their dwellings, and often but little as to the internal accommodation. The difficulties arising therefrom with which working people have to contend, in most thickly populated towns, are well known to be very great. I shall not dwell upon them here, nor attempt to point out the degree in which they are increased by habits of intemperance—the most fruitful cause as well as consequence of domiciliary wretchedness. Such a calculation as would show the probable amount expended by the working population in the metropolis and its suburbs in the 10,200 houses open for the retail sale of intoxicating liquors would be instructive, both as to one fruitful cause of the evil, and also as to legislative measures of an indirect character needed for its removal.*

SOCIETY OF ARTS.

A MEETING of this body was held at the Society's house, Adelphi, on Wednesday, 22nd of January, when a paper was read by Mr. M. DIGBY WYATT "On the Present Aspect of the Fine and Decorative Arts in Italy, with especial reference to the recent Exhibition in Florence." A portion of Mr. Wyatt's paper appeared in our last Number, and a continuation of it will be found in another portion of to-day's paper. The chair was occupied by Mr. A. HENRY LAYARD, M.P.

The discussion was commenced by Mr. JOHN BELL, who remarked that he had not had the advantage of seeing the Exhibition at Florence, but he regretted that the less after having heard so excellent an account of it as was given in the paper which had just been read. The paper was excellent in a great many points, with some of which he was not acquainted; but there was one with which he was well acquainted, namely, that of sculpture. There seemed to be no part of the Florence Exhibition to which Mr. Wyatt had paid more attention than that of sculpture, and that was natural, because sculpture was the growth of Italy; and he thought it might be said that art grew where the materials to work upon existed. Greece and Rome had beautiful marble, and the art of sculpture consequently grew there. In this country we had to import our marble, and that might be disadvantageous to the sculptors of this country, and be one of the reasons why we had not made so much progress in the art of sculpture as the Italians had done. He hoped Mr. Digby Wyatt would be able to tell them that the pieces of sculpture of which he had spoken in such admirable terms would be likely to form a portion of the Great Exhibition of 1862. Mr. Wyatt had also spoken of emulation, which no doubt did great good, and he hoped those works of art which had been referred to would, when they came to this country, lead to emulation, and induce sculptors to endeavour at least to equal, if not to excel them. Mr. Wyatt had referred to one piece of sculpture in high terms of commendation, owing to its simplicity and close adherence to nature—he meant the "Girl Reading." He (Mr. Bell) hoped that would come to England, because there happened to be a work of art by one of our own artists, also a "Girl Reading," to which he believed the expressions of eulogium used by Mr. Wyatt might be fairly applied. He referred to the beautiful "Girl Reading" by Mr. Dowell, one of the most beautiful works of art ever produced in this country. He had no doubt Mr. Dowell's work would form a portion of the Great Exhibition of 1862, and would be compared with the other from Italy. He was very much delighted with what Mr. Wyatt had brought under their notice in his paper.

Mr. OWEN JONES, having been called upon by the Chairman, said Mr. Wyatt had gone over such an extended subject that he was unprepared to follow him. He might remark, however, that it had given him very great pleasure to listen to the very excellent discourse of Mr. Wyatt, and to the views which he had endeavoured to inculcate, which, he was sure, must have much impressed the meeting. He quite agreed with Mr. Wyatt that the great distinctive feature found in the Italian character was an innate love of art, which pervaded all classes, and which we as a nation so much wanted. But at the present time, as Mr. Wyatt had stated, there had arisen among us a much higher feeling for art. And with previous Exhibitions, and the forthcoming Exhibition, which they were looking forward to with pleasurable anticipations, he had no doubt the English mind would be stirred up to enter into that peaceful rivalry which all nations were going into in the study of the beautiful.

Mr. WINKWORTH observed that he had made inquiries as to the probabilities of the best specimens of sculpture shown at the late Florence Exhibition being sent to the Great Exhibition of 1862. He had the pleasure of being acquainted with a gentleman who was employed in arranging that department of the Florence Exhibition, Signor Sebastiani Penzi, and he told him (Mr. Winkworth) that he thought he might speak with safety, knowing as he did the various artists who had contributed to the collection, and said he had every reason to believe that almost every piece of merit, and of course including those to which Mr. Wyatt had so ably, critically, and in such an interesting manner, referred in his paper, would find a position in the Great Exhibition of 1862. He felt exceedingly obliged to Mr. Wyatt for the way in which he had brought before the meeting so interesting a subject as the present position of the fine arts in Italy, where they might be looked upon as almost indigenous.

Mr. BISHOP said Mr. Bell had said that a particular art grew where the materials for it were found. He thought the artists of this country must not screen themselves for not being first-rate artists under the plea that the materials were not produced in this country. The remarks of Mr. Bell would equally apply to the material of iron, which was produced to a greater extent in this country than in any other in the world, and yet we were in no way celebrated for great artistic works in that metal. In Seville he had seen ironwork in the form of gates, &c., which he had never seen equalled in this country. He had been asked, when in Florence, how he liked that city, and his reply was, that he had never been in any place where there was so much artistic design, even in simple things, such as a fountain, which was made into a beautiful design. In his turn he asked his interrogator how he liked London, and the reply was, "Your art is all right angles; even your lamp-posts are right-angled triangles." That was the general impression abroad with regard to art in this country. Artists when they came here soon lost taste, from seeing so much of right angles. In Italy there was some kind of design even in a lamp-post. He met with an Italian at Pisa, who told him that after having been five years in England as a designer of shawl patterns, he felt himself incompetent to his task, because he saw nothing around him to aid him in it. He thought much practical good would be effected by the exhibition of good photographs of the great works of art dwelt on in the paper, and a very great purpose would be answered if they were placed so that our artists and workmen could have the opportunity of inspecting them.

Mr. WINKWORTH said as an effort was being now made to give encouragement to the production of mosaics in this country, he begged to ask Mr. Digby Wyatt, who had alluded to mosaic art, and to various decorative specimens which appeared at the Florence Exhibition, whether he had had any opportunity of ascertaining the relative expense of producing mosaics at the present time as compared with ancient times; and also what he thought would be the expense in England as compared with Italy, ancient or modern.

Mr. DIGBY WYATT replied that he had made inquiries on this subject, but it seemed impossible to ascertain what was the cost of a particular piece of mosaic, because there were only three great establishments in Italy where it was made, and they were the only establishments that he was aware of at which mosaics for monumental purposes were made. These establishments were kept up on vested funds, so that it was almost impossible to ascertain what was the cost of any particular piece of work. From inquiries he had made he found the cost varied very much. In Rome, where the work was very fine, he had heard that the cost was as much as £12 per foot. In Venice it was from £4 to £5 per foot. He thought it would be difficult to get such work done in England for less than £4 or £5 per foot. He had very little doubt, when the first difficulty was got over, the price would not vary more than from £4 to £5 per foot, and in a few years' time they might consider that would be about the price.

Mr. WM. HAWES remarked Mr. Digby Wyatt had very truly said that the great benefit to be derived by the working classes from the forthcoming Exhibition was from the opportunity that would be afforded them of inspecting the superior works

of others executed both at home and abroad. The apprentice was apt to look up to his master as the workman to be followed, and it was only by that class looking at superior works that they could be induced to emulate them. It would be impossible to describe the benefits which the working classes would derive from this opportunity of comparison in language more powerful or more beautiful than that which had been used by Mr. Digby Wyatt; but it would be impossible to do good in this way if the price of admission to the Exhibition of 1862 was to be maintained at what it was in 1851. The working classes never went by themselves to such places, and if the charge for admission was so high as to preclude the working man from taking his wife and family with him, he practically was excluded from the great educational advantages that would be derived from the inspection of the productions of rivals in their crafts in other countries. Mr. Wyatt had noticed the growing love of true art in this country—especially amongst those who from their position and means were able to encourage it; but might they not fairly ask whether a great deal of the want of love of art which had hitherto characterised this country was not owing to the absence of proper teachers of art? Had their architects that love of art which characterised the whole of the paper they had just heard read? Had they advocated and practised that freedom of thought and design, that love of comparison with the works of foreign countries, without which no progress could be made? He thought the luxury of art had not been known amongst them; and it was only when such men as Mr. Digby Wyatt compared the works of foreign countries with those of their own country, and told them in what respects they were superior to ours, that we should become as fond of art, and as ready to encourage it in England as they were in Italy.

The CHAIRMAN said he entirely agreed with what Mr. Wyatt had said with regard to the strong feeling for what we called art which had always prevailed in Italy. Mr. Wyatt had spoken of the industrial arts as being the handmaids of the fine arts. He (the Chairman) was afraid that those parties had once appeared before Sir Cresswell Cresswell, and had been divorced in this country, inasmuch as for a long time past there had seemed to be a complete division between them. Even as late as a few years ago, Englishmen imagined it to be some reflection upon the national character if they united the beautiful with the substantial. Things English were generally things substantially ugly. They might be useful and durable, but beauty was the last element considered. The Italians, from the earliest period of their history, were imbued with the consideration that the elements of beauty were essential in all things which served the uses of daily life. Their simplest boxes, their keys, their handbills, their knives, weapons, and armor—everything which they were in the habit of using—were beautiful. Mr. Wyatt had described how the old Italian writers had pointed out the different masters who were to be employed not only in the decorations of a palace or a church, but in some of the most subordinate details. He might have furnished several illustrations of the carrying out of such advice. Take, for instance, the Palace of Urbino, built by Frederick, Count of Montefeltro, afterwards Duke of Urbino. This prince of a small Italian province sent for artists of the highest standing in all Italy, not only painters and sculptors, but workmen in mosaic, in pottery, and in metals. Their names had been preserved. Melozzo da Forlì—of whose works but fragments remained, yet sufficient to prove that he was one of the greatest painters of his time—Pietro della Francesca, and others, were employed in the walls of the principal apartments, not in painting Madonnas and drunken bores, as Mr. Wyatt had remarked, to be hung up promiscuously in drawing-rooms and dining-rooms, but in decorative painting, with a meaning and an object. For instance, in the library, Melozzo and others painted the poets, philosophers, historians, and orators of ancient times. As illustrating a strong difference of taste, he might mention that when he saw the palace, four years ago, the Papal Legate who inhabited it had sent for an upholsterer, and caused the walls to be papered, and the sculptured chimney-pieces and doors to be removed, for the sake, as was alleged, of rendering the apartments more habitable. This repugnance to decoration was with us almost a national characteristic. After the capture of Delhi, during the Indian mutiny, the beautiful palaces of the Mogul Emperors were occupied by our troops. One of the rooms in which an officer had quartered himself had walls of the most delicate alabaster, inlaid with mosaic work of agate and other precious stones. This was not apparently consistent with his comfort, or his notions of a suitable dwelling-room for an Englishman, and he had the walls whitewashed, but still the gems might be seen glittering through this unworthy covering. They found the greatest masters of Italy devoting their intellects to what might appear, to the modern artist, trivial and unworthy things. Raffaele did not disdain to employ his genius in bringing to perfection that school of arabesques which was founded by Benozzo Gozzoli, Perugino, and Pinturicchio. He spoke under correction, but it would probably be admitted that the most perfect specimens of decorative art, combining what we call high art with the most minute detail of decoration, was the well-known Piccolomini library in the Duomo of Siena. Here splendid historical frescoes were united with the most exquisite arabesques in architectural ornamentation, majolica pavement and carved woodwork—forming one well-considered whole; it was the unity, the carrying out the one great idea throughout, which gave the charm to, and constituted the great beauty of, this magnificent chamber. What would have been the result, if, as probably would have been the case in England, whilst the walls were painted in frescoes the ceiling had been simply whitewashed, the dado of common painted wood, and the flooring of deal boards? That was what would probably have been done in this country a few years ago, if not at this day. He believed the South Kensington Museum, as it was called, had done much in teaching us what art really was as applied to the enjoyments and to the necessities of life, and in awakening an interest in this kind of art. Those who had brought that important collection to its present condition were deserving the highest credit. People looked upon South Kensington as a museum, he did not. [They had the British Museum for the reception of works of art and of antiquity, of all times and classes, illustrative of the progress of civilisation, and consequently of the history of man; but Kensington Museum should contain such objects alone as would furnish instruction to, and cultivate the taste of, not only the working-man, the manufacturer, and the artist, but also those who had the desire, as well as the means, in their own dwellings and by their example, of promoting the public taste. A monument was to be raised to the memory of that illustrious Prince whose loss the whole nation deplored, and none more than those who were connected, like the present audience, with societies for the encouragement of arts and sciences. His own feeling was that the Kensington Museum offered an opportunity of raising a worthy and suitable monument to Prince Albert, for it was mainly to him that the country owed that important national institution. He would like to see that museum converted from an incongruous collection of exhibition rooms, without architectural symmetry or design, into a really handsome public building, worthy of the metropolis and of the magnificent collection thus brought together, and dedicated to the memory of the late Prince Consort. He believed that such a building and institution would be not only a worthy but a lasting monument to his name. It must be acknowledged that we were still very far behind in decorative art in this country. Mr. Owen Jones and Mr. Digby Wyatt had done much, by their important and valuable works, to improve it, but it was too much looked upon as coming within the tradesman's province. The works of these gentlemen were too frequently used like tailors' pattern-books—a frieze applied now, and an ornamental border then, without any reference to object or site. That was not the way in which decorative art was understood and carried out in Italian history by the great artists of the time; and, indeed, as Mr. Wyatt had pointed out, we had still in Italy the strongest indices of the artistic taste and of the love of the beautiful in the simplest details, which prevailed amongst all classes in that country, even in the present day. There was nothing which struck him more in Italy than the number of artists, or skilled mechanics, to be found in the small towns. He believed that was in a measure owing to the municipal system which once prevailed, and which was still far from extinct in many parts of Italy. Cordially as he rejoiced in the prospect that was opening for Italy of a great and prosperous national unity, he nevertheless hoped that the municipal spirit would never be destroyed, but would, on the contrary, be developed to the full extent. He believed it to be the best guardian of liberty and the best promoter of civilisation. During the middle ages each city rivalled its neighbour in the arts. Traces were still to be found of this rivalry in the artists, almost unknown, who long preserved the art traditions of their native places, and who, in any other country, would have established their fame. At Siena, Giotto (whose work had been mentioned by Mr. D. Wyatt), was no unworthy representative of the great school of wood carvers of which the Barlilis were the heads. He (the Chairman) had purchased the first tiles made by the young man at Siena, also mentioned

by Mr. Wyatt, then a chemist's apprentice, who succeeded in imitating, almost to deception, the beautiful majolica pavement from the Piccolomini Palace, now in the Kensington Museum. Napoleone Verga, of Perugia, another young artist mentioned by Mr. Wyatt, and described as not an unworthy rival of the great Italian illuminator of the middle ages, had sent him (the Chairman) last year a collection of miniatures of singular beauty for sale, for which he had, he regretted to say, not been able to find a purchaser, even at the small price of four Napoleons a-piece. One of the ablest workers in intarsia he had ever known (an art which once had attained the greatest perfection in Perugia) was killed in the capture of that city by the Papal troops; and Benvenuti, the wood carver, still sustained the reputation of the school of wood carving which once flourished in Perugia. He need not mention to them the name of Castellani, the celebrated jeweller of Rome, who was perhaps better known to English travellers than any other Italian artist-workman. However deficient may have been the collection he exhibited at Florence, he (the Chairman) could state that he had promised to send a complete series of his truly exquisite jewellery to the Great Exhibition. Mr. Digby Wyatt had alluded to the circumstance of architecture not having kept pace with the other arts in Italy, but the fact was that, owing chiefly to political reasons, there had never been a demand for architectural display. The Jesuits destroyed that art in a great measure; there were few churches built by them, and they were the great church builders of Italy of the last three centuries, which were not of the most debased style. It was almost incredible that a people with the taste and feeling for beauty of the Italians should have permitted their churches to be disfigured with the tawdry decorations and the hideous figures of wood and wax which marked a fast day. He would not inquire the reason why this was so—it might raise questions to be avoided in such a meeting. Those who had seen the restoration of St. Maria Novella at Florence, of the Minerva at Rome, and of St. Petronio at Bologna, would form some idea of the degraded state of church architecture in Italy. He must, however, note one remarkable exception, the facade of the church at Santa Croce, at Florence, mentioned by Mr. Wyatt. He alluded to it more particularly, not only because it was a work of singular beauty, but because he thought Mr. Wyatt was in some respects mistaken as to the way in which the work had been carried out. The architect, Cavaliere Nicolo Matas, had endeavoured to rebuild the facade in conformity with what was believed to be the design of the original architect, who had left it unfinished, and to connect it with the sides of the edifice which had been completed. Signor Matas had employed for the purpose only white, green, and dark red marbles, the three used in the finished part of the building. He had succeeded, in his (the Chairman's) judgment, in producing an admirable imitation of the old style; but the way in which the work had been performed was highly interesting, and appeared to him (the Chairman) to be the right way in carrying out a really great enterprise of the kind. Mr. Digby Wyatt had told them that the greatest artists in Florence had been employed.

Mr. DIGBY WYATT—I meant for the sculpture.

The CHAIRMAN believed his friend had been misinformed. In a conversation with the Cavaliere Matas, he learnt that, so far from employing well-known artists, he afforded the opportunity for any young men to carve the sculptured heads and ornaments which adorned the doorways, &c. Those who then undertook the work did so partly from religious and partly from patriotic motives, and it was on the understanding that they were to be paid only sufficient pay for the actual labor to maintain them, and that they were not to be paid for what might be termed the artistic skill they might display. These sculptures had thus been produced by young artists at the mere price of their day's labor, and a school of architectural sculptors was thus being formed. That the work could not have been executed to any great extent by first-rate artists was, he thought, proved by the fact that, up to last year, the whole sum expended did not exceed £10,000, of which nearly £8,000 had, he believed, been contributed most magnificently by his friend and countryman, Mr. Sloane. He believed there was a great career open for Italy. He trusted the Italians might go back, as regarded the decorative and other arts, to the position in which they were in the fifteenth century, before the bright, clear stream of Italian civilisation had been polluted by the barbarian torrents which poured down the slopes of the Alps, and by the false taste which followed, to hollow imitations of the Classic schools. It was impossible to say to what perfection such men as Giotto, Orcagna, their contemporaries of the fourteenth century, and the great masters of the fifteenth century, might have carried architecture if they had been allowed to perfect the styles which they introduced. Mr. Wyatt had alluded to the language of Italy, and had justly condemned its present weakness and effeminacy. There could be no doubt that a strong, nervous, as well as polished language afforded evidence of the condition of a people as regarded their liberty and civilisation. He thought that already a great improvement had taken place in the language of Italy which augured well for the future. He believed that when statesmen had been trained to the habit of public speaking by free debate in a free popular assembly, as they would ere long be, the Italian language, a language of the highest capabilities, would not be unworthy of a great, free, and highly civilized people. In conclusion, the Chairman tendered the best thanks of the meeting to Mr. Wyatt for his very interesting and instructive paper.

Mr. DIGBY WYATT, in returning thanks, said he had not gone into the details of the work of the restoration of the church of Santa Croce, but he had had frequent conversations with the Cavaliere Matas, and had inspected the building with minuteness. The Chairman was correct in saying that a great deal of the work was done by young men and boys, educated as his friend Mr. Owen Jones educated young persons to carve at the Egyptian intaglios of the Crystal Palace. But in addition to those decorative works there were large pieces of sculpture over the doors, bas-reliefs, 10 feet by 12 feet, which had been entrusted to the first sculptors of Florence. The great figures which stood upon brackets had also been given to the best artists of that city. So that whilst he repeated the best talent had been employed upon the most difficult portions of the work, he did not mean to say there had not been great efforts made to encourage the minor class of art talent on the less elaborate portions.

VOLUNTEER DRILL SHED AT BIRKENHEAD.

A NEW drill shed for the 1st Cheshire Volunteer Engineers has been erected in Church-street, Birkenhead. It is said that it will hold 5,000 persons. The roof is constructed of circular ribs in three thicknesses, of 3-inch spruce boarding, breaking joint. These ribs are placed 10 feet from centre to centre, with purlins 6 feet apart running longitudinally, with spars 2 feet 6 inches from centre to centre, nailed to ridge piece and wall plates. The whole framing is further stiffened with diagonal bracing, and the whole is boarded with 1-inch spruce boarding, covered with asphalted cloth. There are eighteen lights in the roof, filled in with rough plate glass, 6 feet 6 inches by 2 feet 6 inches, with gable lights 10 feet by 9 feet. The entrance to the building is from Church-street, opposite Messrs. Laird's iron ship building yard. Another entrance is obtained from Priory-street. The length of the building is 200 feet, the breadth 52 feet, and height 28 feet 6 inches. When lighted up, upwards of 200 gas jets throw a strong and effective light throughout. An orchestra capable of accommodating 150 performers has been erected. The cost of the shed will be about £500. The house in front will be appropriated for store-rooms, an armoury, and class-rooms. The building was erected from the designs of Lieutenant James Fisher, of the corps.

CHRIST'S CHURCH SCHOOLS, WEST BROMWICH, COMPETITION.

WE learn that nineteen architects sent designs for these schools, and that a Mr. John Weller, of Wolverhampton, is the successful competitor. The selected design contains three school-rooms, one for 150 boys, one for 150 girls, and one for 150 infants. Class-rooms are provided for each school-room. There is also a residence for the schoolmaster.

THE THAMES EMBANKMENT COMMISSION. SOUTHERN SIDE.

AT the last meeting of the Commission, it appeared that about twenty plans for improving the Surrey, or southern, side of the river and its navigation, as well as for establishing a public thoroughfare without stopping the trade upon the bank, have been sent in to the Commissioners, who will proceed to investigate their merits and report thereon to Parliament, on its reassembling, in order that both sides of the river may be embanked or improved contemporaneously.

Mr. HAWKESLEY was the first witness examined. He deposed that his attention had been directed professionally for the last 20 years to the subject of the embankment of the Thames, and that he had recently, at the special request of the local authorities on the Surrey side, gone into that part of the question. Referring to what he termed the "training" of the river, he would propose that its present irregular channel should be converted, by means of an embankment, both on the north and on the south, into one uniform width of 750 feet. This would amazingly improve the current, the navigation, and the general regime of the river. At present there was a large extent of unnecessary foreshore, and when the river became thus contracted, there would always be 5 feet depth of water for would be better to have a solid embankment, without docks, and he would clear the river of its floating barges and timber rafts, which should be stacked. There should be a roadway in front for the wharves, and as a promenade for the public, together with railways or tramways to take the coals and goods out of the vessels over the road by hydraulic cranes, into the warehouses. The whole of the Lambeth district was formerly a large lagoon, communicating with the Thames, and was from 6 to 8 feet below the highest tides, and hence the overflows, which the people had to keep out with cellar-boards. About two-thirds of all the existing wharf walls were bad and imperfect. As regards contributing to the cost of an embankment, the inhabitants contended that they did that already by paying the thirteen-penny rate on coal, and the rates levied by the Metropolitan Board of Works, which should go in aid of the embankment.

Mr. CHURCHMAN gave evidence generally in favor of an embankment, and submitted two plans for the purpose, one for an embankment and another for improving the existing water-way and river walls.

The LORD MAYOR observed it was not a very easy thing to see a way to a solution of the difficulties with which this question of embanking the Surrey side of the river was surrounded, and he was apprehensive that in many cases they would be compelled to leave the wharf walls where they were. The inhabitants on the Surrey side said their walls were so low that the water came over them, and were so defective that it percolated through them, and the only remedy was that they were bound to raise and repair them. The inhabitants on the Surrey side said they had as much right to have an embankment as the inhabitants of the north side; but the answer to that was that the Commissioners in laying down their plan for the Middlesex and northern sides had not done it so much in conformity with the wishes of the inhabitants, as they had recommended it rather in spite of them. They had said in many cases they were sorry this did not suit them, but it must nevertheless be done to meet the imperative necessities of the case involved in the public accommodation, and the requirements of the enormous traffic, between the City and West-end and other metropolitan districts, but there was nothing of this sort on the Surrey side carried on the edge of the river, as upon the northern edge, and the requirement might be met by the formation of new thoroughfares. The Commissioners had received a memorial from the numerous owners and occupiers of wharves on the Surrey side, representing that serious damage would arise to their respective trades by any impediment to the landing and loading of some million of tons of goods at their wharves, and suggesting that the evils arising from the floods may be altered by raising the banks and the wharf walls, and it had also been given in evidence that the sanitary state of the river would be greatly improved and the mud-banks and effluvia removed on the completion of the main drainage. If asked whether he would prefer seeing an embellished embankment, such as the late Sir C. Barry designed, he should certainly say so; but the question was, was it practicable, and whether they could accommodate the number of businesses, such as Mandley's and others, to whom, if sent away, compensation would have to be given. On the northern side it was different. There, there was a large amount of vacant space to be reclaimed, and they could afford to buy up or compensate; but on the Surrey side every yard was occupied. It might be desirable to embank the south side all the way along, and construct handsome quays and promenades, but it could not be done without an enormous amount of money, and the public had not got it to spend. The Commissioners had now received all the plans they intended to take, and would not recommend any without first of all fully consulting the interest of all the parties concerned.

The Commission then adjourned.

DECISIONS IN THE COURTS.

RAILWAY COMPENSATIONS.

Turnham v. the Metropolitan Railway Company.—An action brought against this Company, and in which the plaintiff claimed £1,000 damages, was tried at the Sheriff's Court, in Red Lion-square, before Mr. Serjeant Hayes, acting as assessor, and a special jury.

The plaintiff, Mr. Turnham, landlord of the Rising Sun public-house, in Euston-road, claimed compensation to the amount stated for an alleged injury to his house occasioned by the construction of the Company's works. The house, it appears, stands back from the line of street, with a court in front, separated by a wall from the forecourt of an adjoining house, occupied by a Mr. Morton. About six months ago a fire occurred at the Rising Sun, which rendered it necessary to rebuild a portion of the premises. Part of the new house rested on the wall separating the forecourts. Subsequently some fissures became apparent in the wall, attributable to the construction of the Company's works in close proximity, and it was pulled down and rebuilt. The claim for compensation also included an item for stoppage of trade, said to be due to consequent delay in rebuilding the public-house.

It was stated on the part of the Company that the wall was an old one, and, though they did not deny that the fissures in it might have resulted in a subsidence occasional to their works, they contended they were only liable to place the claimant in the same position he would have been if the railway had not been made—namely, to substantially repair the wall where injured—and not to be put to further expense. The Company, regarding the claim as exorbitant, tendered £25 under the Land Clauses Consolidation Act, determined to maintain what they conceived to be their rights.

The builder and architect employed by the claimant were the only witnesses examined.

The jury, after inspecting the premises, assessed the damages at £20.

SHORING UP PARTY WALLS.

Bulter v. Hunter.—This was an action brought, in the Court of Exchequer, by the plaintiff against the defendant, to recover damages for his not having shored up the house of the plaintiff. The cause was tried before Mr. Baron Martin, who directed a nonsuit. The Hon. George Denman afterwards obtained a rule to set aside the nonsuit, against which rule Mr. Huddleston, Q.C., now showed cause, Mr. Denman, Q.C., appearing in support of it.

It was proved at the trial that the plaintiff had carried on business as a baker for many years at 150, Tottenham-court-road. The defendant was the owner of the adjoining house (149), and in March, 1857, he was desirous of removing his shop-front. A brasseur or beam ran across the front of 149, and rested on the party-wall between that house and the plaintiff's. The defendant obtained an estimate from a builder, who agreed to do the necessary work. He took down the front of defendant's shop, but omitted to shore up the party-wall. Shortly afterwards the plaintiff's house showed signs of falling down, the walls cracked, and it was much injured. It was not denied that the injury sustained resulted from the not shoring-up of the wall, but it was contended that the builder was liable, and not the defendant.

The Court held that this was so, and discharged the rule.

CRICKET MALHERBIE CHURCH.

THIS little church, near Ilminster, Somerset, was rebuilt, a few years ago, to the memory of Stephen Pitt, Esq., by his widow, lately deceased. It is one of the smallest in the country, seats being provided for fifty persons only, and was erected from the designs of Mr. J. Mountford Allen, architect, of Crewkerne, at a cost of upwards of £3,000. The whole of the woodwork, including roofs, seating, &c., is of oak, which, together with the building stone, was furnished from the estate.

It consists of nave and chancel, north transept, comprising the manor pew, south porch, and tower at the north-west angle of the nave, containing a peal of five bells. The roofs are entirely covered with lead; the whole of the windows filled with stained glass, by O'Connor, and the floor laid with encaustic tiles by Minton and Co.

BIRKENHEAD CEMETERY COMPETITION.

THE designs sent in competition for the Birkenhead Cemetery Chapels Competition were publicly exhibited on the 23rd, 24th, and 25th instant. We understand that eleven architects sent designs. The Committee have selected a design, but the name of the successful competitor has not yet been made known.

Reviews.

The Builders' and Contractors' Price Book for 1862. Revised by GEORGE R. BURNELL. Lockwood and Co.

THIS book is now so well known that we need scarcely say more than to remind our readers that the consecutive numbering of the items, introduced as a means of immediate identification, has certain advantages which should not be overlooked. It is impossible to pronounce an opinion on the entire accuracy of the work, for such could be formed only after actual reference to it in practice for a longer period than that during which the present edition has been in our hands. It appears tolerably correct, however, with, perhaps, a slight leaning in favor of the builder.

The memoranda appended is well brought together, while good type, paper, and printing, go far towards divesting the price-book of its naturally uninteresting character.

The Engineers', Architects', and Contractors' Pocket Book for the Year 1862. Lockwood and Co.

THIS old established pocket-book, like the price-book noticed above, formerly issued by Mr. Weale, has, with it, been assigned to Messrs. Lockwood and Co. It contains its usual and large amount of useful information, which it is next to impossible always to bear in mind, and which is more or less always wanted. There are also papers on Sewers, Ironwork, Roofs, Artesian Wells, &c. A chapter on Iron Roofs gives figured sketches. The Obituary of Engineers and Architects for 1860-61 includes such names as John Wood, Laird, Vicat, Pasley, Hodgkinson, Hosking, Maudslay, Austin, Cubitt, and others.

Adcock's Engineers' Pocket Book for the Year 1862.

IS not intended solely for engineers; architects and contractors will here also find voluminous notes and data on subjects of every day practice. Fortunately, it does not seem at all necessary to express any preference for either one or the other of these books, for, whereas the matter given is in some cases the same, and necessarily so, their respective pages are for the most part characterized by just sufficient diversity to enable practitioners to select that which may be more especially suited to their ideas and wants, feeling confident, at the same time, that, whichever they may select, they will not be far wrong. In both we observe some trifling—perhaps, almost unavoidable—inaccuracies.

The Church Builder; a Quarterly Journal of Church Extension in England and Wales. Rivington.

THIS new quarterly periodical is issued by the Committee of the Incorporated Church Building Society, who feel that, in the present day, when so many charitable institutions are competing for support, and endeavoring to attract attention to their own special objects, it is indispensable to adopt every legitimate method of keeping any particular society before the public.

It seems to us that what is intended is to issue something like the usual quarterly reports of the society, in a revised form, at a charge of threepence.

The *Church Builder* will contain anecdotes connected with churches and church work, popular papers on architecture, notices of mortuary memorials, antiquities discovered in the course of church restorations, &c.

The Sheppy Almanac and Directory for 1862. Rigg, Sheerness.

APPEARS to be a very complete local directory. In an article on the sanitary history and condition of Sheerness. It is said that:—

At present, and from the earliest history of the town, the marshes on the south side, and which cover an area of about 1,700 acres, have been made the receptacles for the sewage. A series of ditches or intersecting water courses, covering an area of 74 acres, have been formed in all directions and run into them, carrying in their course a great proportion of the sewage of the town, as well as storm water, there to remain to emit health-destroying malaria on every hand, or to escape by absorption into the earth, or by evaporation into the air. The picture seems a black one, but it is by no means an exaggerated one. In fact, the town is mostly surrounded (except seaward) by stagnant and stinking ditches, the principal of which were primarily formed for the purpose of draining the town and the marshes themselves, but, for the want of a proper and efficient outlet, eventually serving as reservoirs and hot-beds for generating poisonous matter and producing disease and untimely deaths.

After much delay, however, drainage works are in progress.

The outlet for the drainage and the works connected therewith, are placed at West Minster. The waterworks, baths and wash-houses, will adjoin Trinity Church. The principal features in the former are that the sewage runs into a large reservoir, 46 feet in diameter by 12 feet deep, which, after being decolorised and clarified by passing through a filter-bed of gypsum and charcoal, runs into the river by gravitation at low water, and will be pumped out into the river at high water by a scoop-wheel and other machinery invented by Mr. Burns. The pumping machinery will consist of two duplicate steam-engines and two screw tangential pumps and one "bucket scoop-wheel." These machines will be capa-

ble of doing 95 per cent. of duty, while the ordinary pumps are only capable of doing 70 per cent., and the large scoop-wheels which are used throughout the fens do not do more than 50 per cent. duty. Mr. Burns' machinery, when at work at West Minster, will be capable of discharging 50 tons of sewage per minute. It is contemplated to work only one engine and scoop-wheel at once, the other engine and tangential pumps being simply kept as reserves in case of accident or repair. The pumps can also be used for irrigating the land in the vicinity if required.

The length of the sewers to be laid down is over nine miles, and the water-pipes nine miles. The waterworks consist of a well 210 feet by 6 feet 6 inches diameter, and a bore-pipe 14 inches diameter, 70 feet deep, down to the bottom of the well. The water is to be pumped from the well into the tank, 65 feet diameter by 16 feet deep, elevated on a brick tower 70 feet above the surface of the ground. Connected with the waterworks there will be four sets of hot and cold baths, a wash-house and drying stove, a board-room 30 feet by 27 feet, dwelling-house for manager and engine-man. The pumps are to be of a different construction to any in use in England. They are the invention of Mr. Burns, and are capable of working constantly without requiring to be repacked oftener than once a year, whereas the ordinary pumps require to be repacked about once a fortnight. The steam boilers are also different from the usual construction, are perfect smoke preventers, and are capable of evaporating 10 lbs. of water for each pound of coals consumed. The whole of the public works will be completed by the end of June next.

Sheerness is certainly behind the age in some matters; for instance—

The water supply is obtained from the dockyard well, and two wells in Mile Town; the water is doled out by means of donkey barrels—a primitive custom and curiosity of the place—at 1s. per load of six gallons, or, according to an estimate of the late Mr. Austin, Local Government C.E., at a cost to the inhabitants of at least £3,000 a year.

The Midland Counties Almanac and Rural Hand Book for 1862. Newcomb, High-street, Stamford.

THIS is an admirably got-up almanac and hand-book, and should find a large circulation in the district in which it is published, the farming, gardening, and domestic matter being at once useful and of unusual extent for a work of this class. The very necessary distinctions between the advertisement pages and the body of the work is well preserved.

S. O. Beeton's Publications.

JUDGING from a pile of periodicals before us Mr. Beeton is working in a useful direction, in supplying information on many subjects in a popular manner, and in providing amusement and instruction in a harmless way for the young. There is, firstly, the *Christmas Annual* (with its illuminated almanac), comprising a variety of matter, well written, and accompanied with many illustrations. Mr. William Brough's extravaganza for drawing-room performance will, we have no doubt, have been received with great favor. The simplicity of the costume required in its performance is a great merit. There is no doubt that it is a cheap shilling's worth. *The Englishwoman's Domestic Magazine* gives, in addition to its usual matter, a large sheet of patterns, which, we believe (not of our own knowledge) is worth more than the cost of the book, and some *cambric collars*, &c., quite ready, we suppose, to be worked and worn. *The Boy's Own Magazine* gives instructions, among other things, how to model a small working steam-engine, with wood-cuts showing the construction of the several parts. *Home Pets* continues to treat of the habits and treatment of birds. *The Boy's Own Library* is occupied with the adventures of "Phaulcon, or the Ship-boy who became a Prime Minister;" it is printed on better paper than we meet with sometimes now-a-days. Of the *Illuminated Family Bible* we have before given an opinion. *Beeton's Dictionary of Universal Information in Science, Art, and Literature*.—This is the first part of the second volume of the "Dictionary," which is intended to give to "the non-scientific and general reader a full and faithful account of the forces which animate nature, and which are incessantly acting upon mankind—of the elements of which all things are composed,—of inventions of every kind, and of every art and process to which the genius of man has given birth; in other words, here is presented an immense and interesting body of facts, in so far as they relate to things."

We must for the present content ourselves with expressing warm approbation of the *Book of Garden Management*.

GENERAL NEWS.

PATENT BRICKMAKING MACHINE.—The following is a description of an improved patent brickmaking machine, which fills successive groups of moulds with tempered clay, half dry; it compresses the clay into the moulds by a double eccentric; it shaves off the surplus clay, which is thrown back by the eccentric. The group of filled moulds is discharged by the machine, and inverted by hand in an instant; a spring receiver is run underneath, and the whole group of moulds is instantly delivered on to it by a quarter turn of a small piston. "By a calculation of the working power of the machine, and taking each group of moulds at thirty bricks, it is capable of moulding 350 bricks every minute, allowing the 4-horse power engine to make but forty revolutions per minute; 360 per minute are 21,600 per hour, or 216,000 in ten hours. The facility with which the bricks are taken away in groups, and stacked in stoves to be dried in eighteen hours by steam heat, or stacked in the open air to be dried in four days, without regard to weather, is equally to be admired, as the production of so large a number; for every single brick has its top, bottom, sides, and ends equally exposed to the heat. The mode of obtaining a full and constant supply of clay to keep the largest sized machine in constant work, and the mode of tempering that large supply preparatory to moulding, are not less ingenious and efficient than the construction of the machine itself. The machines can be made to produce any required daily quantity of bricks, from 20,000 to 300,000. The estimated expenses for cost of clay near London, grinding and tempering clay, moulding and drying bricks, fuel for burning, packing and discharging kilns or clamps, is 10s. per 1,000 best stock bricks. The patentee (Mr. W. Morris, C.E., of Lambeth-walk), states that he has experimentally tested all the parts of this small, though efficient, machine, and that £5,800 is quite sufficient capital to fit up and work one machine, capable of producing 200,000 bricks per day, ready for sale."

IRELAND.—LUNATIC ASYLUMS.—The Lords Justices have ordered that there be erected at or near Downpatrick, in the County of Down, in and for the proposed new District of Down, an asylum sufficient to contain and accommodate three hundred lunatic poor, such asylum to be called the Down District Lunatic Asylum. The Lords Justices have also, on the application of the Board of Governors, directed that a new Roman Catholic Chapel shall be erected in the Limerick District Lunatic Asylum, at an expense not exceeding £700.

Correspondence.

TO CHECK THE WARPING OF TIMBER.

SIR,—You lately published a few observations from the *Mechanic's Magazine*, which I do not think properly treats the subject. The observations made will apply to some classes of wood but not to all, and then only to timber that is grown in an open situation. The difference in the strength of timber between the south and the north side is attributable to the grain being closer on the north side, as the sap does not rise in the same proportion as upon the south. In forest-grown wood the difference is almost imperceptible, as the sun cannot act upon the trunk of the tree; in open-grown timber the difference is really perceptible, so that we must take open-grown wood to be the only wood that the article professes to deal with. It is well known that all woods do not lose strength by being open grown, or, in other words, that the south side is not always weaker than the north; that theory only applies to the coniferous species. In ash (*Flaxinus Excelsior*) it is the opposite, as the south side is the strongest. In soft-wooded trees, as the acer species, the difference is not perceptible, as the annular rings and the intervening cellular tissue are so close akin as to render the wood so compact in its grain that there is no difference in the strength. As I said before, the coniferous species, or the pines, are the only classes of woods that are stronger on the north side than on the south; it is well known that the difference originates in the wood being more open in its grain on the south side than the north.

There is a very decided distinction in the annular rings, which are of a yellow cast viewed on the end; the dark mark between is the cellular tissue, or the tender part of the wood, which in the heart-wood is filled in with a secretion of inorganic matter; in the sap-wood the cellular tissue is entirely open for the working of the sap, which renders it worthless for durability. It is evident that the closer the wood is grown the stronger it must be, as the cellular tissue is much thinner between the annular rings.

I think I have clearly explained the matter of the strength of timber between the north and south sides of the tree. And now to the cutting of it. The observations as to the cutting are entirely a fallacy. The warping of timber is attributable to the manner of its growth. Boards cut out of a tree that is twisted in its growth have another fault, in the heart of the tree not running straight like forest-grown wood. In a plank cut from a tree of this kind in a straight line, the heart will traverse it from one side to the other. No theory or treatment will prevent it from warping or drying hollow on the side furthest from the heart. When the heart is in the centre of a plank, and each side has an equal chance of drying, it will not warp, but there will be a shake or crack upon each side denoting the position of the heart. I must, in conclusion, observe that the wood of the north side will not warp so much as the wood from the south side; but the secret of preventing wood from warping is not to be arrived at by adopting the plan set forth. I contend that what would be suitable treatment for one tree would not apply to another. The nature of the tree, the soil upon which it is grown, the position of its growth, the period of the year in which it is felled, and the length of time between its felling and converting, are the principal points to be considered, a thorough knowledge and study of which is the only true principle on which we can hope to deal with the warping and converting of timber.

WILLIAM STEVENSON.

Nottingham.

SIR,—It is certainly not creditable to the architectural profession that two edifices, important in the world's history—the International Exhibitions of 1851 and 1862—should have been designed and superintended by non-professional men. Yet it is hardly so much a matter for surprise, when we read some observations made at a meeting of the Institute of British Architects, held on the 23rd December last, by the President, Mr. Tite. That gentleman said: "When he (Mr. Tite) considered it his duty, as President of the Institute, to address some observations to it at the opening meeting, he stated that he would not criticise the International Exhibition, but that he protested against the non-employment of an architect."

It appeared, however, that at a meeting of the Society of Arts, an attack had been made upon the profession of the architect; and the consequence was, the Council had received many letters (and he himself perhaps more) requesting them to take up the cudgels in defence of the profession. Now the Council did not think it became them to do anything of the sort. When a boy, he had heard said that 'calumny and detraction are sparks which, if you do not blow, will go out of themselves.' Further, he (Mr. Tite) permits himself to paraphrase another maxim, and a very stale one too, wherein we were told "Not to answer an unwise man in his want of wisdom," totally forgetting that an unwise man would be most likely to view forbearance as fear.

And now for his protest against the non-employment of an architect; he tells the members of the Institute that it is not necessary for any man to receive professional training to become an eminent architect and engineer!

Now, how can Mr. Tite object to a non-professional man being employed, if he, as a professional man, speaks truly; or does he intend it merely as a piece of courteous flattery to certain architectural prodigies of the nineteenth century? If not, who is the unwise, vider maxim, himself or the public? because, according to his own argument, if it is not necessary to receive any training to rise to eminence as an architect, it is surely unnecessary to receive training to become a third or fourth rate one; therefore, every person who is hard up may put a brass plate on his door inscribed with those much abused titles "architect, engineer, surveyor, &c.," and be a *bona fide* professional man, and thus gain the patronage of a gullible and tolerant public.

Does Mr. Tite think that the protection afforded to the legal and medical professions is superfluous? would he like a military man to defend his cause in court, or perform an operation on any of his limbs? If not, why does he withhold his criticism?

The building for the International Exhibition will, when seen by persons from all parts of the world, be considered a disgrace to the profession and the English nation; yet this might have been prevented.

January 22nd, 1862.

J. S. M.

SIR,—In your notice of the chapel for the North Wales Lunatic Asylum, at Denbigh, the names of the architects were omitted. It was designed by us.

LLOYD WILLIAMS AND UNDERWOOD.

Park-lane, Denbigh, January 28, 1862.

PROFESSIONAL PRACTICE.

SIR,—The enclosed advertisement appeared in last Thursday's *Patriot*, one of the organs of the Independents. At this time of inquiry as to professional practice, it may be worth while to direct attention to such a scandalous offer.

"Bi-Centenary Chapels.—REDUCTION OF FEES.—Mr. —, architect, in consideration of the purport of these proposed chapels, has reduced his fees, and will be happy to prepare plans and superintend the erection of any of these chapels in any part of the kingdom at a commission of 3 per cent. on the outlay. Offices, *

A CONSTANT READER.

WATER IN LEAD PIPES.—An American chemist says that leaden pipes are not acted upon by the water flowing through them at right angles. But whether this is due to the mechanical action of the water at the angle, or to a change in the structure of the lead, he does not say. It is, however, certain that the lead corrodes more rapidly at the bends than at other places. It follows that plumbers should twist the pipes supplied to houses as little as possible; and that turns should be made as gradual as circumstances may admit, and acute angles be avoided.

IMPROVEMENTS IN BUILDING, &c.*

EXCAVATING SAND AND GRAVEL UNDER WATER.—Dated June 15, 1861.—H. J. Kennard, Great George-street, Westminster.

The first part of this invention has for its object the excavation of sand or gravel situated under water, in places where excavations of any description are desirable to be made for foundations or other structures, and consists of an apparatus which is placed on the surface of such sand or gravel, and into which the same is drawn by means of suction. When full of sand or gravel this apparatus is raised out of the water, and is emptied in any convenient place. The apparatus, which may be termed a sand pump, consists of a cylindrical or other shaped water-tight box of wrought or cast iron, or any other suitable material, into the bottom of which is fixed, in a water-tight manner, a tube of convenient diameter, open at both ends and passing upwards inside the box to nearly the top of the same, and continued downwards outside the box to an extent which is governed by the nature of the soil which the pump is to remove. In the top of the box are formed two or more small openings, which are provided with valves opening outwards, and fitting, when closed, in a water-tight manner to the openings; and there is also a larger opening situated in about the centre of the top of the apparatus, over which is fixed, in a water-tight manner, a tube of large diameter, containing a weighted piston working therein in a water-tight, or nearly water-tight manner, and actuated by a rope or chain from above the surface of the water; or a cylindrical bellows or flexible disc may be attached over the before-mentioned opening, and moved up and down, thereby being also a weight attached to the top of the disc. The second part of this invention has the same object as the first part, but the apparatus that is to be lowered down upon the sand or gravel below the water consists of a strong circular or other shaped bag, into which the sand or gravel is driven by the water when in an agitated state, and in which bag the sand or gravel subsides by gravity.

WATER-CLOSETS, AND COCKS USED THEREWITH.—Dated June 18, 1861.—J. Dixon, Newcastle-on-Tyne.

The object of this invention is to simplify the construction of water-closets by dispensing with any connexions to cisterns, except by a pipe which is to be brought either from a cistern or from main pipe, without the necessity of wires, cranks, service boxes, valves, &c. The patentee effects this by forming a communication from the bottom of the water-closet pan or basin to a vessel placed behind the closet, in which is a ball or ball-cock; when the handle or seat is at liberty the valve at bottom of basin is shut, the water rises in the basin, and at the same time flows through the pipe to the vessel behind the basin, and raises the ball, which is connected to a lever in communication with a cock or valve, and shuts off the supply to the basin, leaving the water standing in the basin up to the level of the overflow pipe. In this self-acting water-closet the patentee uses a catamaran cylinder, or a chamber with a flexible disc for holding the valve at bottom of basin tight, and by regulating the supply of water to the cylinder or chamber the basin can be allowed to wash out during any required time. The construction and arrangement of the ball-cock, which can be used for other purposes, is as follows:—Two fixed elastic rings, with a perforated ring between them, are used, and by this arrangement the pressure of the fluid offers no resistance against the spindle of the valve, as it does not press against a seat, but goes into both rings; there is little or no wear on the spindle as it works against the elastic rings, which can be easily removed.

SMOKE-CONSUMING FURNACES.—Dated June 20, 1861.—C. Stevens.

These furnaces are constructed with two grates placed opposite and beneath the boilers, and rectangular openings are made in the horizontal plan of the grates, allowing the divisions of the two fire boxes to communicate with a third compartment, which is situated between them, and in which the smoke is consumed. This third compartment is divided into other compartments corresponding with the openings made in the grates, the number of which must depend on the length of the grate. The small divisions perpendicular to the longitudinal axis of the furnace, and serving to separate the smoke consumer into compartments, are only about half the height of the space which separates the grate from the boilers, thus allowing a free space above by which the products of the combustion are conducted into the flue placed at the upper part of the fire bridge of the furnace.

WARNING APPARATUS.—Dated June 26, 1861.—J. Redfern.

The inventor proposes fixing a fire-grate on the centre of a circular plate. This plate will have attached to it an ash-box with register door, and a cylinder with fire door will be placed upon it, such cylinder having an open top, on which he proposes fitting a syphon tube, connecting this first-named cylinder with a second cylinder, placed in a second circular plate, to which plate will be attached a flue to carry off the gases from the fire to the chimney. The above-named parts of apparatus may be made of iron or other material.

VENTILATING APPARATUS.—Dated June 26, 1861.—S. Wenton.

This relates particularly to the mode of arranging and giving motion to a series of louvre or luffer boards, or flat strips or pieces of wood, metal, glass, or other material, enclosed in a frame, and capable of being placed at any angle, so as to be capable of opening or closing the apertures in which they are placed to any extent desired.

PRESERVING WOOD AND IRON.—Dated June 19, 1861.—J. Cullen.

Here a composition, consisting of coal tar, quick lime, and charcoal, is used. The charcoal is reduced to a fine powder, and such is the case with the quick lime; these materials are to be well mixed together and subjected to heat. To preserve wood, the composition is heated, and the wood is immersed therein.

IRON CASEMENTS.—Dated June 25, 1861.—L. Pierre.

The inventor fixes the framing on the opening to be closed in a small rabbet on both sides, letting it in at the top, its two sides being adjusted to the sill. The sashes are fitted to the framing by plates or fastenings, which fit on to round rods intended to cover the joints. The two sides of the framing carry in their entire height a return or small joint, which, penetrating into a dove-tail lined with a band of caoutchouc, on which it presses, prevents any air or water penetrating by the two sides. At the upper part of the framing, as also at the lower part of the sill, is also fitted a dove-tail lined with caoutchouc, which, receiving a certain pressure by the fastening or bolt (the hooks of which take into the rods), hermetically closes the window.

WINDOW FRAMES AND BLINDS.—Dated June 25, 1861.—J. Brown.

For the purposes of this invention, in order more advantageously to employ wire gauze or perforated blinds, for the purpose of ventilation, the upper part or arch of the opening for a window frame is cut away, if already built, in order to receive an air or perforated block in the form of a keystone, but in new buildings such arch head is to have a perforated block in stone, brick, or iron, with curves at the back of the same introduced in the arch when constructing it. The upper part of the window frame is enclosed above the top of the upper sash, so that there is a hollow chamber at the upper part of the window frame into which air can readily enter from the external air through the perforated block in the arch. In the interior of the room there are one or more openings or air passages into this hollow chamber, which are covered with wire gauze or perforated metal, by which air may pass from the chamber above the sashes to the room, or from the room to the outer atmosphere.

WINDOW-SASH PULLEYS.—Dated July 3, 1861.—J. Terry, Birmingham.

This invention consists in manufacturing the pulleys or rollers of window-sash pulleys, screw pulleys, and upright pulleys, of glass, china, earthenware, or other vitreous or semi-vitreous material, instead of making them of metal, as ordinarily practised.

MANUFACTURE OF BRICKS.—Dated July 5, 1861.—W. England, Wollaston Works, near Stourbridge.

This invention consists in moulding bricks in such forms that no mortar-bed or joint is perceptible upon the face of the work, a rebate or flange upon the edges of each brick concealing the joint.

TENDERS.

STABLING, PUTNEY-HEATH.

For stabling at Putney-heath, for John Bruce, Esq. Mr. Robert Blesley, architect.							
8, Furnival's-inn.							
Fawcett	£525	0	0	Dawson	£319	5	0
Avis and Son	495	0	0	Mauley and Rogers (accepted) ..	415	0	0
Adamson and Son	458	0	0				

DRAINAGE, &c., LOUGHTON.

For clearing, draining and fencing forest land. Mr. William Doyley, surveyor, Loughton.			
Denning.....	£807 0	Pound.....	£216 7
Jarvis.....	286 0	Chilton.....	190 0
Morris.....	220 0		

REPAIRS, &c., CAMDEN-TOWN.

For repairs and alterations at 116, High-street, Camden-town, for Mr. Pain. Mr. Henry McCalla, architect.			
Partridge and Crutch	£225	Porter	£119
Pugh and Wallis	189	Head	112
London Building Company	179	Minty	110
Simmonds and Argent	175		

PULLING-DOWN BUILDINGS, TWICKENHAM.

For pulling down old buildings at Twickenham, for Mr. George Scovell; cleaning and stacking materials. Mr. Henry McCalla, architect.			
Canes	£57 0	Canes	£35 0
Harris	53 13	Tatum	28 15
Porter, Wilnot-square	48 0	Holmes and Humphreys (accepted) ..	23 4
Turner	45 0	Saunders	20 0
Sharp and Hodgett	40 0	Woolger	18 10
Porter, Bunhill-row	35 0		

SCHOOLS, LEYTONSTONE.

SCHOOLS, LEYTONSTONE.

For the erection of a new boys' school at the West Ham Union, Leytonstone.		Mr. John W. Dennison, architect.
Reed	£315 0	Hedges
Milkington	289 0	A. S. Read
Savill	275 0	Rivett
Patman and Fotheringham	266 0	Page (accepted)
		£248 0
		246 0
		227 0
		199 10

DRYING LOFTS, BERMONDSEY.

For new drying lofts at Messrs. Glover and Rhinocott's, Long-lane, Bermondsey. Mr.			
F. J. Milman, architect. Quantities supplied.			
Marsland and Son	£550 0 0	Jennings	£497 0 0
Penlington	544 17 0	J. J. and F. Coleman	495 0 0
Leake	512 8 6		

CONTRACTS OPEN.

BANK.

NOTTS.—For the erection of a bank at Oundle, Northamptonshire, for the Stamford, Spalding, and Boston Banking Company. Particulars from Mr. William Eve, surveyor, 3, Union-court, Old Broad-street, E.C. Tenders on or before the 7th of Feb.

HOSPITAL.

DEVONPORT.—For the erection of the Devonport Stonehouse, and Cornwall Hospital, at Devonport. Drawings, &c., with Alfred Norman, architect, Ker-street, Devonport, until the 22nd February, where tenders, sealed, and endorsed "Tender for Hospital at Devonport," must be delivered not later than eleven a.m., on the 24th February.

LUNATIC ASYLUM.

IRELAND.—For the erection of a lunatic asylum, at Letterkenny, for the co. Donegal. Parties who wish to tender, are to signify their intention by letter, directed to Mr. Wilkinson, architect, 49, Westland-row, not later than the 5th February.

BATH-ROOM, &c.

TENBURY WELLS.—For the erection of a bath-room, pump-room, and cottage, at Tenbury, for the Tenbury Wells Improvement Company, Limited. Drawings, &c., at the office of Mr. Norris, solicitor, Tenbury; and further particulars of Mr. James Cranston, architect, 1, Temple-row West, Birmingham; or of Mr. Robert Robinson, Tenbury, Secretary to the Company. Tenders to be sent in to Robert Robinson, Secretary, sealed and endorsed "Tenders for Bath and Pump-room, &c.," on or before the 3rd February.

GAOL.

MONAGHAN.—For the alterations and additions to Monaghan Gaol. Plans, &c., to the 2nd of February next, at the gaol, and at the office of the architect, Mr. John McCuddy, 34, Westland-row, Dublin. Sealed tenders to be delivered at the gaol, before 3rd of February.

RAILWAY OFFICES.

DARLINGTON.—For the erection of offices in connexion with the New Engine Works, at Darlington, of the Stockton and Darlington Railway Company. Plans, &c., to February 5, at the Company's offices, Northgate, Darlington. Tenders are to be sent in on or before February 6, 1862, addressed to the secretary, at the Railway Offices, and endorsed "Tender for Offices."

LODGE.

ESSEX.—For the rebuilding of the principal portion of Witham Lodge, in the county of Essex. Plans, &c., with Mr. Fred. Chancellor, architect, &c., Chelmsford, Essex, and 25, Old Broad-street, London. Quantities will be supplied to these builders who make application for same previous to the 31st inst. Tenders to be delivered to the architect, at Chelmsford, on or before the 7th February.

CHURCHES.

CHESHIRE.—For the works to be done in a new church at present in course of erection at Waterfoot, near Newchurch, Rosendale. Plans, &c., at the Duke of Buccleugh Inn, Waterfoot, on application to the Rev. R. Smith, Glen House, near Newchurch Station. Tenders to be delivered to James Crabtree, Esq., Newchurch, on or before 10th February, 1862.

DEMPRIES (N. B.).—For executing the mason, joiner, plasterer, slater, and plumber works connected with the Free Church to be erected at Kirkmichael, Dumfriesshire. Plans, &c., with Mr. Blues, farmer, Dalruscan, "Linwald, with whom sealed tenders are to be lodged before 11th Feb.

CEMETERY WORKS.

PETERBOROUGH.—For cast-iron palisades for the Peterborough Cemetery, 4½ feet high, with two double-gates of the width of 10 feet at the entrance, and two side gates, 4 feet wide each, with locks and bolts complete, including fixing in the stone, pillars, and coping (which will be erected by the Commissioners), and two coats of red-lead and two coats of paint, of approved color. Sealed tenders, with drawings of the palisades and gates, and the names and addresses of two sureties for the performance of the contract, to be sent to Nelson Wilkinson, clerk to the Commissioners, on or before the 3rd of February. Further particulars may be obtained of Mr. Ruddle, at his office in Newtown, Peterborough.

DWELLING HOUSES.

ST. JOHN'S-WOOD.—For the completion of five houses at St. John's-wood, for the directors of the Temperance Permanent Land and Building Society. Plans, &c., at the offices of the Society. Tenders to be delivered to Henry J. Phillips, secretary, at the offices, 34, Moorgate-street, before four o'clock, on February 4, sealed, and endorsed "Tenders for Houses at St. John's-wood."

SOUTHAMPTON.—For the erection of two houses, &c., on the Belvedere Estate, Southampton, for Mr. John Smith, chemist. Drawings, &c., with Mr. W. Hives, architect,

&c., of Portland-street. Sealed tenders (addressed to Mr. Smith) are to be delivered at Mr. Hives's offices, on or before the 8th February.

NOTTS.—For the erection of a new house and out-office, at Stantonbury, near Wolverton. Plans, &c., at the office of Mr. E. F. Law, architect, Northampton. Tenders, endorsed, to be delivered to the architect on or before the 8th February.

SHEDS, &c.

LONDON.—For the erection of sheds and other buildings, to be constructed chiefly of wood. Drawings, &c., with Henry McCalla, C.E., architect, 25, Westbourne-place, Eaton-square. Tenders to be delivered before 4 p.m., February 3rd.

TIMBER QUAY.

LOWESTOFT.—For the amendment and reconstruction of a timber quay heading to part of the town quay or wharf, on the south side of Lowestoft harbor, and other works connected therewith, in completion of the present quay heading. Plans, &c., at the office of the Town Surveyor, in the Town-hall. Tenders, sealed, to be addressed to James Peto, Esq., and left at the office of the surveyor to the Improvement Commission, by two p.m., of the 8th of February.

BRIDGE.

IRELAND.—For building an iron bridge over the river Fergus, at Ennis. Plans, &c., at the office of the secretary of Grand Jury for the county of Clare. Tenders, sealed and endorsed, "Tender for a Iron Bridge," and directed to the secretary of Grand Jury, co. Clare, by Feb. 13.

DEACON.

SCOTLAND.—For the construction of a small malleable iron beacon for the Commissioners of Northern Lighthouses, conform to plans and specifications made out by Messrs. D. and T. Stevenson, civil engineers, Edinburgh. Plans on application at the office of the Commissioners, 84, George-street, Edinburgh. Tenders, marked "Tenders for Beacon," are to be lodged with Alex. Cunningham, secretary, Northern Lighthouse Office, Edinburgh, before the 3rd February.

MILITARY WORKS.

DUBLIN.—For works to be done in constructing schoolmaster's quarters, at Arbor-hill, Dublin. Parties desiring to tender must leave their names at the District Royal Engineer's Office, Lower Castle-yard, Dublin, or at the Royal Engineer's Office, Royal Barracks, before the 4th February, and pay 10s. 6d. for bill of quantities.

DUBLIN.—For works to be done in constructing a riding school, at Island Bridge Barracks, Dublin. Parties desiring to tender must leave their names at the District Royal Engineer's Office, Lower Castle-yard, Dublin, or at the Royal Engineer's Office, Island Bridge Barracks, before the 8th February, and pay 10s. 6d. for bill of quantities.

YORKSHIRE.—For building a storehouse at Scarborough for the United Corps of Militia Artillery, East and North Yorkshire. Plans, &c., at the Adjutant's Office, No. 19, Mulgrave-terrace, Scarborough; at the offices of Messrs. Leeman and Clark, in York; and at the office of Mr. Trevor, in Northallerton. Sealed tenders, addressed to "The Chairman of the Committee, and marked "Tender for Militia Storehouse, &c.," to the Adjutant's Office, in Scarborough, not later than Tuesday, February 18.

SUPPLY.

BIRKENHEAD.—For the delivery of about 400 tons of cast-iron pipes, of 20 inches, 15 inches, and 12 inches diameter, to the Birkenhead Improvement Commissioners. Specifications and form of tender may be obtained of Mr. Bateman, 16, Great George-street, Westminster, or at the Commissioners' offices, Birkenhead.

LIVERPOOL.—For the supply to the Mersey Docks and Harbor Board of good common Baltic timber, in such quantities and dimensions as are herein specified, viz.:—9,000 cubic feet, in lengths of 42 to 45 feet, and 12 to 14 inches quarter girth; 4,000 cubic feet, in lengths of 16 to 22 feet (average to be not less than 20 feet), and 12 to 14 inches quarter girth; 11,000 cubic feet, lengths of 12 to 16 feet (average to be not less than 14 feet), and 12 to 14 inches quarter girth; or, 24,000 cubic feet in all. The whole to be free from defects of any kind, and to be delivered (free of all charges for carriage, &c.) not later than the 15th June, on the quay of the Mersey Dock, at Birkenhead. Tenders, sealed and endorsed "Tender for Baltic Timber," addressed to the Chairman of the Committee of Works, to be sent in to the Dock Office, Liverpool, not later than 10 a.m. on the 6th February.

SANDOWN.—For the supply of about 1,600 feet of 12-inch stoneware socket pipes, and about 1,100 feet of 9-inch ditto, with junctions and bends, for the Sandown Local Board of Health. The specification, with the conditions of contract, at the office of the Surveyor, Mr. F. Newman, 16, George-street, Ryde. Sealed tenders to be delivered to T. B. Hall, clerk to the Local Board, Sandown, Isle of Wight, by noon, on February 14th, and endorsed "Tender for Stoneware Pipes."

CONVICT PRISONS.—For the supply of timbers, deals, slates, lime, sand, bricks, lead, glass, wrought and cast iron, ironmongery, gas and water pipes, white lead, oils, &c., for 12 months from the 1st of April next, to the 31st of March, 1863, for the Pentonville, Millbank, Brixton, Portland, Portsmouth, Chatham, Parkhurst, Dartmoor, and Woking Prisons, and the Refuge at Fulham. Tenders, pre-paid, addressed "The Directors of Convict Prisons, 45, Parliament-street, Westminster, S.W., on or before noon of the 1st March. Forms of tenders at the several prisons before named, or at the office of the Directors, 45, Parliament-street, on and after the 15th February.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favor us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

J. C.—Thanks; next week.

JAMES F. D.—Not quite to the point.

G. C.—Shall hear from us.

S. R. K.—We cannot comply.

O. C.—Thanks.

M. T.—E.—Does not meet the case.

D. S. P.—Letter has been sent, decision is not yet known.

E. H.—Declined with thanks.

W. R. G.—Impossible for us to attend to such requests.

M.—Will find reply on another page.

DUPRELS.—Use the best cement, or, perhaps, artificial stone.

G. S. X.—We should be sorry to mislead in consequence of possessing imperfect information. Ask a solicitor.

V. K.—Try again. We think differently.

S.—Will receive a letter.

N. B.—This week.

W. X. R.—Tracing has been received, and subject shall be engraved.

G. W.—Suggestion has been received.

W. S.—We shall be glad to see promised paper.

R. B.—See notice in a late number.

A. M.—Glad to receive additional notes.

A. SUBSCRIBER (Dalketh).—Apply to our publisher.

M. S.—Might have made his "request" in courteous terms; we should have something to do were we to charge ourselves with the return of rejected matter.

B. X. B.—Shall receive attention. Thanks for sketches.

NOTICE.

The Seventh Volume of the BUILDING NEWS is now ready, bound in cloth, price 21s.

Subscribers can have their copies bound, either with or without the advertisement pages, for 4s. 6d., on sending them to the office. Cases ready for binding the volume may be had price 2s. each.

* All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old Bow-street, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 15 to 21, Old Bow-street. Advertisements are received up to six o'clock on Thursdays.

THE ASSOCIATES OF THE INSTITUTE.



HERE is room for progress in most public bodies; and those corporations and societies have ordinarily been the most useful, the most honoured, and the most powerful, which have constantly endeavored to keep themselves abreast, if not ahead, of the course of things around them. The Royal Institute of British Architects is no exception to this rule. Whatever may have been the exact exigencies of the time at which it was constituted, there can be no doubt that, in order for it to maintain unchallenged the head of the profession, certain alterations in the customs—perhaps, some changes in the constitution then established—have become necessary from time to time; and it is equally true that just so far as those alterations have been recognised and acted upon, has the popularity, the power, and the vitality of the Society increased.

We recognise gladly such features in the recent history of the Institute as the gradual increase in the value and practical interest of the papers and discussions, the location of the Society in a build-

ing where it is brought into near neighborhood with all the other architectural bodies, and the election in succession of two very eminent practising architects to the post of President. The increased number of prizes open to students, and, above all, the continued and increasing attention bestowed upon matters of professional interest—such as the proposed voluntary examinations, the conduct of architectural practice, and the like, are all circumstances that give gratifying evidence of the energy and elasticity of the Society, and its desire to benefit the profession at large, and all give promise that no really necessary reform will be long overlooked or postponed if the members can once be brought to acknowledge its importance.

The condition of the Institute has long presented an anomaly which has often provoked complaint, and which we consider to be one of the first matters deserving attention; we refer to the unfortunate working of the division of its members into Fellows and Associates, a division which, even if right in principle, is not correct as applied by the Institute, and is the occasion of much that hinders the prosperity of the body, and that to an extent greater than is suspected by many.

The profession of architecture may be said to be really divided into two great classes, each comprising many men of skill and experience, but widely different in their relation to professional practice; these classes consist of those who are and those who are not in responsible practice on their own account.

This distinction is broad, intelligible, and real. On the one hand we have a body of men whose conduct in matters relating to practice, whose customs in matters relating to valuation, whose evidence as given in courts of law, and whose daily habits, form the customs and precedents of the profession.

The youngest of these can do harm by improper practice, or can do good by maintaining, as opportunity offers, principles of justice and fairness, and the oldest cannot afford to go counter to the general expression of the opinion of this body of men. No man in actual practice and in any way recognised by his brethren, can commit an unworthy action without inflicting a blow upon the profession, and each one who is courteous, accomplished, distinguished, and successful, reflects honor on the whole body. It is then in the highest degree desirable that these men should be knit together into one community, and that as strong a feeling of union and mutual assistance and dependence as possible should be fostered. It is most desirable also that the younger men should, from the first, feel that they are responsible for what they do to a public opinion of their own body, and that, on the other hand, they are so affiliated to that body, as that their best energies and much of their leisure time is fairly due, and ought to be devoted to objects of common importance. It is equally necessary that the leaders and patriarchs of the profession should welcome the newcomers as men embarked on the same voyage as themselves, or, to put the matter proverbially, men "sailing in the same boat." On the other hand, the large body of architectural men not actually in responsible practice, while it no doubt comprehends many whose energies and knowledge are of great value, includes, in the very nature of things, hardly any whose opinions, customs, or practice, can have a wide influence on the profession at large. The responsibility makes the difference, and together with it there is a difference in professional position between a man who receives orders from another in the same office, and one who does not, which cannot be overlooked.

There can be no doubt that the true constitution of an Architectural Society would admit this difference, that its members ought to consist exclusively of men in responsible practice, and its auxiliary members of men not yet so engaged. This being so, there can be no doubt that, while the personal weight of the senior members and their long experience would always secure to them the direction of the affairs of the Society, the energies of young men would from the first be enlisted, and a most salutary sense of the responsibility they assume on entering practice would be excited.

Now, what is the actual state of the case?

In the Institute we have a division into Fellows and Associates, the former being the only *bona fide* members, as they alone are entitled to vote.

Instead, however, of this division being dependent on the test we have shown to be the natural one, the actual qualifications for becoming a Fellow are, first, the intending Fellow must have been seven years in responsible practice; secondly, he must be willing to pay four guineas a year in place of two; and, thirdly, he must make a declaration, the practical interpretation of which is that he will not measure works for builders.

This artificial distinction ought, we consider, to be removed, and we have little doubt that the day will come when it will be removed. Among the results of it may be traced the following undesirable, but existing, circumstances.

The Institute at the present moment is deprived of the membership of a considerable number of useful men who do not choose to enter as Associates, and have not been long enough in practice to enter as Fellows. Of these the majority are lost altogether, because, having kept aloof for seven years, they commonly feel, when the eighth comes, that they care nothing about membership, and remain permanently away.

The Institute includes a heterogeneous body of Associates, which, while embracing a certain number of assistants and students, the only legitimate class from whom this body ought to be recruited, includes also a considerable number of men in practice who are not yet eligible on account of having been fewer than the "perfect number" of years on their own responsibility, and a good many others eligible, indeed, as far as years of practice go, but who elect to remain Associates, some because they have taken up measuring as part of their practice, some because they do not choose to double their subscription, and many because the treatment they have received as Associates has not encouraged them to seek a more intimate connexion with the body.

It would be introducing a topic that would swell this paper beyond all bounds were we to introduce and examine the question of measuring. An opportunity may occur of doing that, but in what we are now saying we are obliged to leave out of consideration the claims of those Associates who remain so because they prefer to be able to measure, if they like, and we are content to base our argument solely on the unsuitableness of marking off so large a number of educated, energetic men in responsible practice, as though their youth necessarily disqualified them from being admitted members, and we maintain that the advantages to be derived from securing the hearty uncompromising co-operation of these members of the body would be well worth securing.

Sometimes, however, the difficulties of a formal revision of legally settled rules, such as those established by a Royal charter, is so great that one is obliged to be content with an informal but practical remedy for temporary purposes. Has any such practical remedy been applied?

We regret to be forced to admit that the false position in which the larger part of the Associates of the Institute are placed by the constitution of the Society, has not been always counteracted, as it might, by the habitual and customary modes of procedure, but that the contrary has at times been the case. Associates have had to complain, and with great reason, that the tone adopted towards them, as a body, is not that to which many of them, as individuals, are fairly entitled; they feel that not only does their inability to vote tell against them—a circumstance which, as matters stand, cannot be helped—but that too often the tone adopted is as though they, notwithstanding any amount of practice, of personal devotion to the profession, of education, and of ability, are in no way to be held as of much account, are not to be admitted as equals, but, if they speak, are to be listened to with condescension and toleration, and if they object, are to be put down as turbulent and ambitious.

Architects are gentlemen, and, therefore, all this is done with a certain amount of courtesy and amenity of manner; but other architects are also gentlemen, and the position they are forced to be content with is none the less galling to them, because, if sometimes cuttingly reminded of it, those reminders are not also coarse; and we do hope that this serious element of weakness will be considered, and, as far as possible, amended.

One remedy, the most effectual but by no means the most desirable, lies at the disposal of the Associates themselves did they but choose to use it. Let but the present Associates remain as they are without becoming Fellows, and in a few years the character and importance of the Associate body would be raised to such a pitch, by increasing numbers and increasing weight of character as would compel any desired recognition. This course, however, is neither desirable nor easy; if practicable, it would involve a sort of hostile combination which we should be glad to see avoided, and it would always be liable to fail, as the good intentions of many a valiant hearted Associate have already fallen, under well-directed invitations from some of the higher powers to "come up for a Fellow."

A better course, and one more worthy of the spirit proper to the members of a liberal profession, would be, that those who take the lead in the society should more habitually and constantly recognise, in the way that some of them from time to time do, the claims of the Associates to attention and consideration, and should include some of the Associates more frequently than has commonly been the case in committees, deputations and the like. We are not, in referring to this subject, touching upon an imaginary grievance—and in sketching out this mode of palliating it, we are not suggesting an impossible or an unnecessary course—and in suggesting as we have done the possibility of combination and hostility, we are merely repeating what has been said scores of times already. Let us hope that the matter will receive proper attention from the proper quarter, and in the proper spirit.

THE EXHIBITION BUILDING.

AS the time approaches for the building to be delivered over to the Commissioners, all doubt as to the sufficient completion of the contract seems to vanish. We can estimate pretty fairly the ability of the contractors to do the little which remains to be done by the magnitude of the work now finished. A little rivalry between the respective superintendents of the eastern and western domes has put both gentlemen upon their mettle, and every nerve and sinew is tightened to the work. As far as we can see, little beyond the surmounting finials and the glass remain to be added to either of them. The ponderous ribs are fixed, and the sashes are in their places. We shall soon hear the last of the incessant hammering of rivets, and be enabled, by the removal of the scaffolding, to get a proper view of the domes. The staircases are erected, although we fear there are not enough of them, in different parts of the building. The foundations are laid for the small iron colonnade under the eastern entrance archway. Scaffolding is only seen here and there in isolated patches against the exterior of the building. The "lengthened dullness long drawn out," which forms the Cromwell-road front, is revealed in all its painful baldness. One spark of ornament alone flickers along the dreary waste of piled bricks; and in noticing the iron ventilators over the windows, we feel very much as Garrick did when, sitting sadly at the performance of a party of amateurs, he saw an actor—retained for a part too insignificant for the principals—step for a moment on the stage; "Thank God, there's an actor at last!" he exclaimed. So with the design of this ironwork. There is really some taste visible in it, but it is a very small lump to leaven so huge a mass—a "cup of sack thrown into Thames water."

The covering-in of the northern courts proceeds rapidly, and the rooms over the southern arcade of the Horticultural Society are roofed. The elevation of them is in unison with the architecture which they surmount. Each bay is divided into three semicircular openings. The view of them will be almost as pleasant as the prospect will be from them when the grounds are once again decked with summer flowers.

The great point of attraction to the visitors for the last fortnight has, however, been the nave, where various experiments in color have been exhibited, and certainly it has been a curious spectacle. The more ambitious amongst the amateurs of South Kensington have each fastened on a bay of the nave, and written themselves down incompetent. One gentleman covered his ribs with brown ochre, gashed with short stripes of a deeper tint, after the fashion of savages. Another introduces a German element, and reminds us of their striped blue and white sentry-boxes. In another bay we look upon blue ribs with white imposed ornament, and yellow columns with white chamfers. Another specimen—and this, we believe, is the architect's—introduces us to the fashionable "mauve" in the columns, with the same fast color alternately with white in the ceiling. The best specimen, taken as simple decoration, is the contractor's, Mr. Kelk's; it consists of pale green columns, with bright red chamfers; the ribs are buff, but the central of the five boards which constitute it is painted green, thus carrying the color over, and connecting the two sides. We don't, however, altogether like the patches of blue ornament on the buff ribs. The different style of coloring seems, however, to have satisfied no one except—as one of the papers remarked—their own respective authors. It strikes us that all the attempts have been made upon a wrong principle. The object in coloring a building of this kind ought to be to obtain a neutral and unobtrusive background for the objects exhibited in it, instead of which each decorator has seemingly striven to show his work, and to spread a reputation over the surface of the building.

We have been told over and over again that the building was never intended to be other than a useful one, and yet half-a-dozen or more gentlemen are permitted, we hope at their own expense, to display their peculiar crotchets on decoration, in the hope of rendering it ornamental and themselves famous. Neither hope is likely to be realised. One would have thought that the easiest plan would have been to have entrusted the design of the decoration to Mr. Owen Jones—who knows more about color than all the officials of South Kensington put together—with the task. Had this been done two months ago, the style would have been settled long ago, and the building have, before now, been half colored. His successful treatment of the interior of the 1851 building ought to have been sufficient to over-ride any jealousy about having an architect, even at this late hour, employed on the work; whereas the want of a competent man to do it, and the substitution of experimentalists, has caused already a very serious delay, for, until the nave is painted, the flooring cannot be laid; nor can, consequently, the cases of goods be received, or, at any rate, opened. The last experiment has been made by Mr. Crace. It is a fine bit of decoration. The polygonal form of the ribs is distinctly marked by alternate red and blue bands, with Pompeian ornament on it. At each angle, separating them, there is a small gilt circle. The caps of the columns are gilt, picked out with blue or red. The name of a country is written on the central blue band forming the crown of the rib. The ceiling is painted grey, with red ornament on it, between the ribs, following the rake of the roof. A fringe of green and red is put on either side of the ridge-piece, and a somewhat similar band above the plates. But as the whole framework of the rib is not thus strongly painted, but only the polygonal portion, it gives a weak appearance to the rib, which it does not possess without it. Moreover, this style of decoration will not only be very costly—far more so, indeed, than is warranted by the architectural or the temporary character of the building—but it will attract the visitor's eye, instead of being a background for exhibited objects. It is pure waste of money to gild such a structure as the Exhibition, for not all the gold in Australia can render it a work of art. The folly would only

be surpassed by that of putting mosaics, as is contemplated, on the blank walls in Cromwell-road. No decorator should be suffered to color it who will not undertake to limit himself to the employment of three tints. If they will not suffice, it would be better to save time, labor, and money, and show it in its true colors to the world—a temporary, watertight shed, with a certain amount of simple beauty in its nave and transepts.

The picture gallery, which extends the whole length of Cromwell-road, is—as has been asserted by the official admirer of the building and all connected with it—perhaps, without a rival in the world. It is lengthy, of sufficient width, and faultless in point of light. No pictures could be hung in a better gallery to display their qualities. We render to Captain Fowke this tribute of praise, because he has earned it; but we must also say that no gallery could, by hardly any possibility, be uglier. The heavy principal rafters are like the timbers of a crane; the cove which connects the skylight with the walls is fearfully oppressive. If this were all, we should, for the sake of the main desiderate which Captain Fowke has given us, have been silent on the matter, thinking that economy and lack of funds had restrained his hand and limited the ebullition of his taste; but it could not have been a deficiency of pecuniary means which inflicted on us that cumbrous cornice, or the still heavier plaster string which robs the gallery of a large portion of its apparent size. The bands round the doorways are effective, because nothing beyond the simplest forms has been attempted. It is consolatory, at all events, to know that the pictures will be seen, and seen, also, to the best advantage.

The eastern annexe is more than three parts completed, and the ground is now broken to form a communication, under the entrance hall of the Horticultural grounds, with the main building. This communication will be by four arched galleries, each 10 feet wide, two for egress and two for ingress. The ribs of this annexe are precisely similar to those of the western one, but the 50-feet galleries are arranged with an open court between them instead of being side by side as on the other side of the grounds.

THE QUEEN'S CONCERT ROOMS, HANOVER SQUARE.

SHOPS famous for the good quality of their wares, and places of public resort noted for the excellence of their entertainment, may for a long time dispense with that costly decoration which is an absolute and periodical necessity to inferior establishments. We get, through long associations, to like even the ugly attributes of the rooms of houses wherein we have been always well treated, as we do that of a familiar, although not handsome face, which, growing daily older, smiles with unvarying kindness upon us. Even the old-fashioned garments which keep a good and worthy man warm and comfortable give us pleasure. If the metal be sterling, we have a certain affection for the purse which has for years secured it to us. The plainness of the covering is certainly no sign of the goodness of the thing covered, but for its sake we look kindly upon it. What man that is "moved with concord of sweet sounds" ever passed the Hanover-square Rooms without bestowing a glance of grateful recognition upon the grimy brick walls within which for years have undulated the richest waves of harmony? The numerous concert-rooms and music-halls which have sprung up in all parts of London, gladly as we welcome them, do not diminish our attachment to the old rooms. The Hanover-square Rooms contain, perhaps, the best concert-room in acoustic qualities to be found in London, and thus still furnish the fittest home for the world-famous and unrivalled Philharmonic Band. The choicest treat to all lovers of good music is partaken there. The Philharmonic was founded to lead public taste, not to follow the caprices of fashion. It has done noble work, but as great a career lies before it as that which has already given it renown. The rooms to which these concerts have given an enviable reputation, unable, however, any longer to resist the tempting charms of the decorator, have been recently unveiled, and display attractions on their walls which they never before possessed, and which are commensurate with those found within them. They are now, we are informed on a printed bill, deemed suitable not only for concerts, but "balls, Sabbath services, bazaars, and the meetings of religious and other societies." We shall not criticise the new ornamentation in reference to its suitability to such varied and widely different purposes. It has been decorated as a concert-room. The walls bear in medallions, on a gold ground, the representations of eminent composers. Small bas-reliefs refer allegorically to the charms of instrumental and of vocal music. The larger spaces between the gilded pilasters are filled with large mirrors, and the whole apartment is decorated with a gorgeousness of color and gold-leaf which tells immediately the object of the designer. The main walls are tinted a warm grey color, which forms a border to the pale green panels upon them. Small Cupidons in oval panels decorate the lower portions of the room, whilst above we see the medallions of composers which we have already noticed. A bright red line on the gilt enriched edging of the panels has a very fine effect, and is most tastefully introduced. The skirting of the room is an imitation of various marbles. The pilasters and pilaster caps are profusely gilt, and the frieze is picked out with blue color to give effect to the festoons with which it is decorated. The general tint of the waggon-headed ceiling is a light green, similar to that of the wall panels. It is subdivided with gilt mouldings, and enriched with colored borders. The old pictures are still preserved in the ceiling, and massive frames enclose them. Their position has seemingly determined the shape and size of the ceiling panels. A band of blue color, with white trellis ornament, partly gilt, is carried at intervals across the ceiling, apparently to connect the color conspicuous in the frieze. Some well-designed surface ornament has been put upon the panels of the walls.

The orchestra is in its lower compartments faced with silvered glass, whilst above white and gold ornamental panels stand out sufficiently from the grey and green ground.

The front of the Royal box and gallery is perhaps the best piece of design in the room. It is composed of small circles, most dexterously and artistically arranged. The outline of the front is an inverted ogee. It is tinted in white buff and gold. The Royal Arms are one mass of rich gilding. The whole of the carton pierre work has been done by Messrs. Jackson, of Rathbone-place. The room is at night well lighted by "sun burners" and reflecting silvered globes, put up by Mullett and Co., of Holborn.

The buffet at the side is elegantly embellished. The supper-room below is painted in imitation of foreign marbles, with occasional patches of red and blue color behind the enrichments.

The whole of the decoration has been carried out by Mr. C. Smith, of Baker-street, from the designs and under the superintendence of Mr. Thomas Dyke, architect, of Marylebone-road.

SOCIETY OF FEMALE ARTISTS.

THE ladies of this society have the honor of inaugurating the most extraordinary picture season this country has yet known, for, in addition to the regularly established annuals of home growth, we shall have, when the Great International Exhibition opens, examples by all the most eminent artists of whom the civilised world can boast. As foreign courts have the power of deciding at what period they will commence the history of art, the English school, beginning with Hogarth, will have to sustain a shock of arms, particularly when our painters of the present day encounter their contemporaries from the other side of the Channel, from which they will in all probability emerge sadder but wiser men. Let us, however, not anticipate defeat, but confine our thoughts to the subject immediately under consideration. The principal change in the present exhibition of the Society of Female Artists is a sensible reduction in the number of works exhibited. Now, as there is still plenty of wall-room above "the line," we think bad drawings or pictures would have been better than the old, dirty, and patched paper which is now, by that discriminating process, become prominent to the sight. We have a conviction, in which we are supported by the French, that it is both fair and beneficial to art that while space can be found every picture sent should be exhibited. By this arrangement the crime of painting a bad picture receives immediate punishment by public exposure. This is far more convincing to the delinquent than rejection. The refusal to hang a picture implies a preference of others offensive to the self-esteem of the painter, but hang it up by the side of those preferred and he receives a silent censure, which lasts during the whole time it is exposed to public view, and if there is any real good in him, he wishes it at home again long before the time has expired. The exhibition of his picture also induces a young artist to take an interest in those by which it is surrounded, and he must improve by comparison, when his jealousy is not excited. He may hear his crude work criticised; he may see that it is constantly passed without attracting attention, and, above all, he may have the mortification of seeing his grand effort unmercifully laughed at. If it be in his nature to learn at all, he will then learn something greatly to his advantage. These remarks rest, however, upon the supposition of plenty of room, which happens to have been the case in the present exhibition, and we therefore think the number of pictures and drawings should not have been unnecessarily reduced through fear of the fastidious notions of either the press or of visitors.

Taking things, however, as we find them, we think the general aspect of the room is more satisfactory than it was last year. Several of the former contributors are missing, and we particularly remarked the absence of Mrs. Murray, of Teneriffe, whose dashing water-color drawings, which, if we could not always praise, gave a masculine feature to the gallery, by their powerful coloring and vigorous drawing, which was highly advantageous to artists whose feeble productions came into close comparison with them. The loss of this striking point has reduced the general aspect to a more equable character, but, at the same time, it cannot be denied, even if we wished it, that there are some very meritorious works, in nearly each branch of art.

The historical will be confined to a well-painted picture by Miss Kate Swift, entitled, "The Escape of Grotius from Lœnstein." We think this lady has not given her title due consideration, because Grotius, her hero, is not visible, being concealed in the box carried away. Catalogue in hand, the present title may answer the purpose; but what will be understood by the picture hereafter, when there is no explanation, must be left to the ingenuity of posterity. There is considerable dignity in the attitude of the lady ordering the box into the boat, and the whole of this figure is extremely well painted, but the rest of the figures are poor in comparison. "Give me a Hand," by the same artist, although unfinished, we like better. The outline of the female carrying a pail on her head is full and flowing, the folds of her dress are grouped in simple masses, and the head and extremities are extremely well understood. There is also some merit in "Peace likely to be Broken;" and the "Portrait of a Child" is painted with a full and firm pencil: all the features and undulations of the face are intelligibly expressed, but it seems to us that there was a strong indication of premature age in one so young, as if the photograph had done duty for the sitter; and the direction of the lines describing the contour of the upper part of the head does not range with those which regulate the features and lower parts of the face. But the most ambitious attempt connected with the human form is a female head by Mrs. H. Moseley. The expression is most life-like and intellectual,

the drawing of the features is elevated and spiritual, and the coloring is judiciously subdued to give those high qualities their due importance with the spectator. This excellent work is an imaginary head of Shakspeare's Miranda, from the "Tempest," and it expresses the wonder and delight of Miranda when she meets Fernando for the first time on the Enchanted Island. Next in degree of merit in figure painting is "The Absent Scholar," by Mdlle. Sophie Jobert. The three figures—the absent scholar, immersed in his book, holds out his hand for a glass of water, which a pretty maid is about to give him; but her duty to her master is somewhat retarded by his secretary, who is diverting her attention by a little furtive flirtation. The whole of this picture is in excellent tone, and the composition is generally well arranged, with the exception of the diagonal line formed by the table-cover, which is a spasmodic effort at ease which defeats the intention. Mrs. Backhouse continues to contribute her powerfully colored half-length subjects, which generally belong to the class now known as "servant-girlism." One of these is entitled "Beginning Life"—a young aspirant for domestic honors or annoyances, as events may prove, who handles her first broom in a manner singularly suggestive of the probable mischief she will, in course of time, do with it. In the next picture we see her, after having been "A Year in Place," more cool and hardened to her diurnal depredations, having taught her mistress the necessary powers of endurance by her having consented to remain in her place so long. Mrs. Backhouse exhibits several others, which display her power of drawing, and, in most instances, her habit of forcing her tints beyond the truth of nature.

There are several French female artists who regularly exhibit with those of this society. Mdlle. Eudes de Guimard displays great versatility in the selection of her subjects and the management of their effects. "The School in Normandy" is a very talented production, in which the brightly luminous edgings on the figures of the female scholars, from a side window, are well sustained by the sombre tints of their dresses in shade, and the whole is thrown into breadth by the white cap and black gown of *la religieuse*, who is standing up giving them their lesson. "A Child Looking at Prints" is arranged on quite a different scale. The tone is cool and clear, the pencilling is very firm and distinct, and the whole effect fresh and bright. The minute detail of this latter picture very little prepares one for the breadth and spirit in the larger work of "A Young Girl Caressing a Dove." It has a lively and playful action, and is in every respect very cleverly drawn and painted. "The Knitter" is by Madame Marie Chosson. The female figure in this picture has that easy attitude and evident power of mobility which distinguish the French school in this branch of art. This admirable effect is, we believe, obtained by a little exaggeration of the aerial perspective, and the delicate mode in which the outline is made to melt into space, which detaches the figure from the background, the same feeling being carried through the lesser divisions of the subject, which, instead of appearing fixed by strong outline and firm shadows, gives the appearance of freedom and motion. This ease of attitude will also be found in "The Little Coquette," by Angélique Razé, which is elegantly treated and delicately colored.*

DRAINAGE IN IRELAND.

A MEETING of landed proprietors of the district affected by the drainage of Lough Corrib has taken place at Galway, and adopted resolutions, and a memorial to the Lords of the Treasury, expressing dissatisfaction at the way in which the Board of Works performed the drainage. They are charged with the sum of £28,000, and interest at 4 per cent., and yet they say they are in a position to prove on oath, before any impartial engineer, perfectly independent of the Board of Works, or of memorialists, that the lands charged with this £28,000 have been rendered almost useless, and in several instances back-water has flowed over the lands hitherto dry, and the seed has been washed out of the land by the overflow of the lake, thereby rendering both capital and labor a total loss. That several of the memorialists, acting on the faith that the arterial drainage was perfected, had extensive drainage done on their estates, but, in consequence of the defect above complained of, their labor and capital are also lost. Therefore, they pray their lordships will immediately institute an inquiry into the truth of those allegations, and appoint an impartial engineer to examine into the condition of the lands, in order either to make the drainage effective, or to render the memorialists such other relief as the justice and fairness of the case demand.

THE DOCK WORKS, DUNDEE.

ANOTHER disaster of a most serious nature has occurred at the New Dock works, by which the east wall of the lock of Camperdown Dock has been ruined in a moment. After the failure in October last of the east wall of the dock, it was resolved by the trustees to exclude the sewage from the lock, pending the construction of a new sewer at a distance from the dock walls, by a cofferdam at its northern extremity; and a contract was concluded with Carstairs, Mitchell, and Co. to execute the work, and to pump out the sewerage from the lock, under the superintendence of Mr. Leslie and Mr. Stevenson, engineers. This work went on successfully until the cofferdam was completed and the sewage almost pumped out, and operations were in progress for preparing to complete the masonry of the lock walls. No one about the works had the least suspicion of danger or of risk. About a quarter to six, however, after the work of the day had ended, the watchman on the works was suddenly alarmed by a loud noise, caused by a discharge of sewage bursting from the bottom at a point to the southward of the lock. It was discovered that the wall was rent throughout its whole length, and the lock speedily filling with sewage.

The accident will be of the most serious consequence to the completion of the works.

* We will complete our notice of these works next week.

THE PRINCE CONSORT'S MONUMENT.

THE nation, which a few weeks ago bowed itself down with grief at the loss of the Prince Consort, has now resolved, in calm, sober earnestness, becomingly to honor his memory. Meetings have been held in various places, and they prove the natural and complete unanimity of the people, who have only appreciated thier loss and his worth when the active brain is still, the warm heart beats no more, and the liberal hand is closed in death. There will, we are confident, be no lack of means to rear a fitting monument and to express the country's gratitude. Our only fear is that the crowd of philanthropic gentlemen, each with his well-trained hobby, will ride rudely in and disturb the quiet character of our action. A man with a pet crotchety is notoriously persevering; all other subjects are, in his mind, subservient to it; everything must be absorbed to satisfy its appetite; no obstacle can check him—no argument can modify his ardour or dim the sense of its supreme importance. To this concentration of all his energies to the one point the hobby-rider owes, perhaps, his success—or, at all events, a greater portion of it. The very fact that the departed Prince aided their several institutions leads each to believe that it occupied the most prominent place in his thoughts. Thus we have the promoters of soup kitchens, boulevards, model cottages, baths and wash-houses, industrial universities, lodging houses, and other, in themselves, unexceptionable establishments, anxious to make themselves a lasting monument by having the Prince's name and the money subscribed to do honor to his memory attached in perpetuity to the object of their solicitude.

We do not wish to utter a disparaging word of any of these institutions, but we protest against the Prince's monument being made a simple hoarding even for the display of philanthropic advertisements. There is a selfishness about the proceeding altogether incompatible with that spirit which ought to animate us. Even the specious plea of combining the useful with the monumental cannot be entertained. We do not want to make capital out of our loss, nor do we expect a profitable return for the payment of a debt of gratitude. Even the assertion by the indefatigable Mr. Cole, that versions of his scheme of an industrial university are known to exist, drawn up by the Prince himself in great detail, does not reconcile us to it for this purpose. The same argument applies with equal force to anything else which the Prince was preparing before his fatal illness struck him. On its own merits, when it is fairly laid before us, just as we should have done if the Prince had lived to introduce it, we will hereafter consider the subject; but we do not want it mixed up with the Prince Consort's monument. A complete design, with contractor's estimate, may, for aught we know, be prepared at South Kensington; and the whole thing may some morning be presented, cut and dried, for public acceptance. Fortunately, we cannot again be forced by circumstances into acquiescence with these plans. We have had one example of the art-productions of that favored institution.

The successful Exhibition proceedings will find no counterpart in the Prince's monument. To commemorate an art-patron we need the assistance of artists, of men who have something more than the Exhibition building and the praise of it to point to as the result of their working brains.

Against all useful schemes, of whatever kind, we strongly protest. They all have a party character about them which is incompatible with the object in view. A monument is the only memorial which will speak to all classes and to all generations; it is the only form in which the Prince and his actions could be made to fill the undivided thoughts of every spectator. We should, in looking upon it, dwell only on his good and serviceable life, on his wise and generous counsels, on the influence of his bright examples, on all, in fact, which appertained to him instead of having our reflections divided into other channels. The higher the art which may be developed in the monument the greater would be the pleasure felt by educated men who stand before it, whilst to the humblest citizen of that England which he honored and enriched, it would tell its simple, unalloyed tale. We would go even still further, and say that a plain granite slab with the name of Albert cut upon it would better commemorate his virtues than the most costly university which, under Mr. Cole's auspices, might be reared. In the one his merits would stand unbought to the world, in the other they would be "veiled in modest allegory."

The philanthropic and industrial gentlemen are not, however, the only consequential intruders in this matter, whose services can easily be dispensed with. The old proposition for transporting Cleopatra's needle is again revived, and put forward as a fitting token of respect to England's Prince. If the obelisk had been worth transporting, and had been in any way equal to those in the Place de la Concorde and the Piazza di San Pietro, it would have been set up here in London long ago; but the truth is, neglect, time and weather have cut records on it which not even Champollion could decipher. It is a monolith of a certain antiquarian value, but, half buried on the sea shore of Alexandria, it interests more people than it would in England. As a monument to a Christian prince, its hieroglyphics are an absurdity; it would be as sensible to set up an Assyrian bull or a statue of Vishnu. Less inappropriate, but belonging to the same class of suggestions, is that for carrying out Mr. Scott's Crimean memorial. The cross we can fully believe was well and artistically designed, but it was designed for an expressly different purpose than that for which we now desire a monument. If it was appropriate to the Guards who fell for their country, it was consequently a military monument; their martial deeds formed its especial characteristics, and a war-inspiring sentiment pervaded it. The fact of its successful treatment forms the insurmountable objection to its fitness for the present sad occasion. The circumstance strongly urged, of its being admired by

the Prince Consort, adds nothing to the value of the suggestion, but rather strengthens the opposition to it. We want, in short, no ready-made monuments for the Prince foisted upon us, not even that of the barefaced Mr. Keyse, whose grand military and naval trophy with Corinthian caps and gorgeous compositions, excites his own admiration and stimulates his obtrusiveness. Self-confidence leads this man to expect the public will not only inspect his work, but subscribe a million and a half for the fulfilment of his intentions. The "building of the trophy will be constructed," we are told, on a novel principle. We cannot but consider this highly probable, when the projector constitutes in himself architect, builder and banker. As we wash mud from a glass, we would remove such an intruder from reflections on Prince Albert's monument. We never heard of him before now, and we do not care to meet with his name again.

The London and Manchester Committee have done well in confining themselves to the simple resolution that the tribute to the Prince's memory shall be monumental, and in deferring future considerations as to details. This is as it should be. Artists and sculptors are the proper persons to show us what an original monument ought to be. They neither need to be told what it should express any more than they require to be informed upon its posture. It is their business to embody in bronze or marble the character of the man, to make it express his various excellencies, to depict thereon his domestic solicitude, his steadfast godliness, and his enlightened public acts; to portray to future ages how he employed his great talents unostentatiously, yet wisely, for England's welfare by fostering agriculture, promoting education, encouraging the arts, and extending a friendly hand to the suffering poor. The less our sculptors are fettered, the more satisfactory will the monument be, and that we should have one worthy of the deceased Prince is the wish of all of us. It would be as unbecoming for statesmen and divines dogmatically to dictate details to artists as for the latter to attempt to influence the formation of a sermon or a foreign policy. All we demand is a fair field for the exercise of our sculptors' talent, and that bustling activity and intrusive impudence shall not be suffered to thrust themselves forward and snatch the honor of executing the work from competent hands.

The idea elicited at Manchester of a temple containing a statue was perhaps the happiest which the melancholy circumstances have yet occasioned. The temple would, of course, be detached; its interior might be adorned with bas-reliefs or paintings; the floor, walls, and ceiling, would allow of large space for decoration; the openings, glazed with plate glass, might permit the ordinary passers-by to see the white marble statue in the centre, protected from the dust, rain, and soot of our London streets, whilst, under proper regulations, the public might be admitted to enter and look upon the detailed records of the Prince's goodness and of the service which he rendered to us.*

This is only one of many ideas published, and it strikes us as the best. It would be appropriate, and put forth, without authority or "permission of the Lord President;" it kindles no suspicious motive that the Prince Consort's memory would be submerged by other interests. It was meant as a hint to guide our artists, not as a manacle to bind them. It tends to expand rather than to limit their conceptions; it is exclusive only in keeping all extraneous, selfish, and party predilections from sully with private schemes the purity of motive and the hearty earnestness which are the corner stones upon which the "Albert Monument" ought to rest.

SALISBURY CATHEDRAL.

WORKMEN have been busily engaged for some days past in erecting a scaffolding between the four piers which support the tower and spire of Salisbury Cathedral, for the purpose of enabling Mr. G. G. Scott to thoroughly examine the several parts of the structure in order to ascertain the best means of repairing and strengthening it. It appears from a recent order of her Majesty in Council, ratifying a scheme for the transfer of certain estates belonging to the Dean and Chapter of Salisbury to the Ecclesiastical Commissioners for England, that by reason of the great antiquity of the cathedral, and of the want of due reparation in times past, it has become necessary to expend thereon in repairs and in effecting improvements conducive to the security of the fabric, a sum of money amounting to £10,000 or thereabouts, and that this sum, together with interest thereon at the rate of £3 per cent. per annum from September, 1860, is forthwith to be provided and expended by the Commissioners in effecting such repairs and improvements, under the superintendence of and according to plans and specifications to be prepared by the architect of the said Dean and Chapter, as may be deemed necessary. It may not be generally known that the spire has for years past been some 22 inches out of perpendicular. The tower and spire, it will be remembered, were not a part of the design when the edifice was first built. It is thought that their erection was the "improvement" for which the materials of Old Sarum were used by virtue of letters patent granted by Edward III. to Bishop Wyvil and the Dean and Chapter in 1331.

SUGGESTED PATENT MUSEUM AND LIBRARY.—According to the report of the Commissioners of Patents the fees collected by that office gives a surplus of income over expenditure amounting to £20,000 per annum. The Commissioners recommend that that surplus should be applied for the benefit of patentees, by erecting a patent office, with a museum and library attached.

THE DEEPEST MINES IN ENGLAND.—The *Mining Journal* says:—The deepest mines in England are the Astley Deep Pits, near Dukinfield, which are 686½ yards in perpendicular depth.

SADLER'S WELLS THEATRE.—The fifty years' lease of Sadler's Wells Theatre and the site on which it stands has been put up at public auction. The particulars stated that it is subject to a ground-rent of £277 per annum; and is let to Mr. Phelps for £1,000 a year for seven years, from Ladyday, 1860.

* Since this was written we have received a letter from J. C. almost to the same effect.

ON THE ESSENTIALS OF A HEALTHY DWELLING AND THE EXTENSION OF ITS BENEFITS TO THE LABORING POPULATION.*

The second branch of my subject—the extension of the benefits of a healthy dwelling to the laboring population—now demands our attention.

The numerous discussions bearing on this question which have taken place in Parliament, in the daily papers, as well as in other periodicals and pamphlets, might lead to the supposition that its importance is now duly estimated by the public; but those who have sounded the depth and scanned the wide-spread extent of the evil to be remedied well know that such is not the case, and have too often seen the responsibility of contributing to its removal ignored by those who ought to feel its weight; whilst in some deeply to be regretted instances the want of a due estimate of the difficulties to be overcome, and of the requisite practical knowledge, has led to the pursuit of measures which, owing to their non-remunerative pecuniary results, have tended seriously to retard the progress of a movement, practically commenced eighteen years since.

The pecuniary features of the question are of such vital importance, from their necessary bearing on the adequate extension of the work, that I cannot here omit the expression of my belief that if the actual expenditure in providing improved dwellings for the laboring classes in towns had more generally been managed with such discretion as to yield the very moderate return of 4 per cent. or even of 3½ per cent., after the payment of all expenses and the providing a sinking fund for the repayment of the money laid out, there would have been no difficulty in obtaining from philanthropic capitalists an amount sufficient for building a very large number of improved dwellings, and in evidence that such a return is obtainable numerous examples might be instanced of that and a higher rate of interest on the outlay having been regularly obtained. Whilst some of these will be noticed hereafter, I think it right to remark, in reference to certain exceptional cases, that due allowance should be made for the difficulties and extra expenses attendant on most new undertakings, as well as for the experimental nature of some of the establishments in which the accommodation provided has been of a very mixed character. The results in those instances showing, I believe, invariably, that new houses for families yield a better return on the outlay than lodging houses for single persons, a purpose to which, however, old buildings have been adapted with very satisfactory pecuniary results.

Speculative builders, or those who are merely seeking what is usually called a good investment, would not, of course, consider 4 per cent. a sufficiently remunerative return; but I confess to feeling some surprise that, amongst the many who have accumulated large fortunes in connexion with the building trade in the metropolis, I know of only one firm, that of Messrs. Newson and Son, having so invested a part of the gains derived, in a large measure, from the labor of the working classes. It may, however, be owing to my limited means of information in this respect that I am unable to name other instances in the metropolis, though in Edinburgh several such examples were lately pointed out to me, which I could not but regard with peculiar interest and as well worthy of imitation. Some notice of these buildings is given in my report made at the Glasgow meeting for the promotion of social science. I have also seen with pleasure, in a very useful monthly paper, the *British Workman*, which circulates extensively amongst that class of readers, a view and brief notice of a village near Lowestoft rebuilt by Sir Morton Peto, which is described as one of the most picturesque villages in the kingdom.

Architects have sometimes been reproached for a want of interest and for exercising so little influence in regard to the improvement of the dwellings of the laboring classes. Knowing, as I well do, how rarely the members of the profession have to do with buildings of this class, such a charge is to me only one amongst many other proofs of the prevailing ignorance with regard to the measures and machinery best adapted to remedy the evil in question, and which I shall endeavour, as far as my ability and experience enable me, to point out, unbiassed by any interest whatever, and only actuated by the earnest desire of contributing to an object which I believe is most intimately connected with the physical, the moral, and the religious improvement of the masses of our population.

The measures for effecting this much-needed reform may be classified under three heads:—

1. Those of a legislative character, and those for which the Executive Government are responsible.
2. Those which ought to be adopted by landowners and employers generally for the benefit of their dependants, whether as tenants or workpeople constantly employed by them.
3. Those which originate from benevolent motives, and are undertaken either by associations or by individuals in order to aid in helping themselves those who need such aid.

In noticing successively these three classes of measures, some illustrative facts will be stated, which are partially the results of observations made during a residence of nearly five years on the Continent for the recovery of health. Some of the investigations then made lead me to remark, in reference to the first class of measures, that a jealous respect for the rights of persons and property, which is our security for many of the inestimable advantages enjoyed under a free government, has a manifest tendency to impede the carrying out of such public improvements as those which, under arbitrary rule, have been effected with unprecedented rapidity, on so gigantic a scale, in the metropolis of a neighboring country. What I think, in our own metropolis, we have a right to complain of, and ought to feel ashamed at, is the bungling and pettifogging manner in which many of our new streets have been formed, and fine opportunities for obtaining magnificent effects irrecoverably lost. It would be invidious to point them out; they will readily suggest themselves to you.

Time will not allow me to dwell on the important bearing which the formation of new streets has on my subject, or many facts which have come under my own observation might be stated, particularly some with regard to that great financial failure, Victoria-street, where several fruitless attempts were made to obtain from the managers, on reasonable terms, back land, as sites for dwellings suited to the displaced population, who, as a necessary consequence of the clearance which had been made, were huddled together in a frightful degree. This is but one example of what has so frequently taken place elsewhere in our own metropolis, owing to the want of a compulsory provision for the displaced poor. The same neglect on the part of the Government was the cause of an incalculable amount of suffering in Paris, when the

people who tenanted its narrow and winding streets were forcibly ejected, and often their few articles of furniture placed on the pavé, they themselves not knowing where to seek shelter. I visited more than once, in the spring of 1858, a kind of encampment of 600 such families, formed not far from the *Barrière de l'Etoile*, and heard from some of them their pitiable tale, and the exorbitant rent they were paying for temporary hovels, which the police had warned them would be pulled down in three months, and they forced again to go, they knew not whither. From a sense of duty, and encouraged by the fact of the Emperor having caused the paper which I read before the Institute in 1850 to be translated and widely circulated in France, I thought it right to bring this subject under his Majesty's personal consideration, in a memorial, which was graciously received, and, I hope, has not been altogether fruitless.

Our own legislative measures tending to give to the laboring population the benefits of a healthy dwelling, only comprised, when I addressed the Institute twelve years since, the passing of the Public Health Act, and the Nuisance Removal and Diseases Prevention Acts. Since then several measures, the necessity for which was dwelt upon in my paper, have been adopted, such as the removal of the tax on windows and on bricks, for both of which we are indebted to the Administration under Lord John, now the Earl Russell; the regulation of common lodging-houses (one of the most, amongst the many, valuable efforts of Lord Shaftesbury in this cause); the empowering, under the Laborers' Dwelling Act, the formation and general management of independent local associations, formed for providing improved dwellings, on the principle of joint-stock companies, with limited liability. Other bills have been passed for facilitating the construction of improved laborers' dwellings and cottages in Scotland and in Ireland; but, during the last session, a bill which would have given to English landowners, tenants in tail, the power of raising money for building improved cottages on their estates, very similar to that already granted in Scotland, was, after it had passed the House of Commons with but little opposition, rejected by a majority of 16 to 13 in the House of Lords, at the close of a debate which had at least the appearance of showing how much less real interest is taken in this question than might have been inferred from several debates, at the opening of the session, relative to the destruction of laborers' dwellings, consequent on the introduction of railways to the centre of the metropolis. Those debates led to the insertion of clauses in some of the railway bills obliging the companies to provide certain cheap trains, at hours suitable for the conveyance of working people, to and from the precincts of their residences out of town. A standing order, intended to apply to cases in which Parliament granted power to pull down houses occupied by the working population, was passed by the House of Lords in 1853, at the instigation of the Earl of Shaftesbury, but, as far as practical results, it had become a dead letter.

That further legislative interference is indispensable to the remedying existing evils might be proved by abundant evidence. Excepting within the City of London,* and in the case of common lodging-houses, no power has yet been granted effectually to check the evil of overcrowding, in regard to which the Medical Officer of Health in the city of London thus speaks:—"Without doubt it is the worst of all the unwholesome influences with which you have to deal; and until it is corrected you will never be secure from those outbursts of disease which appear to set your sanitary measures at defiance." A report made by the Assistant-Commissioner of Police on the condition of single rooms occupied by families in the metropolis, without the precincts of the city authorities, after giving in detail about forty most painfully disgusting examples of overcrowding, says:—"It is evident from these cases, which might be greatly multiplied, that all the evils which the Acts for regulating common lodging-houses were intended to remedy still exist, almost without abatement, in single rooms occupied by families, single rooms so occupied being exempt from the operation of the Act." The causes are the avarice of owners and the poverty or debasement of occupants, and the only hope of improvement seems to be in some legislative enactment.

In regard to the overcrowding of cottages in country districts, I might remind you of the numerous letters on that subject which not long since appeared in the *Times*, and were but the echo of what has been said and proved so often elsewhere. It was with a view to obtain reliable statistical returns on this important subject that the then Secretary of State for the Home Department was memorialised eighteen months since, and urged by a deputation from the Council of the National Association for Social Science, to take advantage of the recent Census for this purpose; but, notwithstanding the unobjectionable character of the inquiry, and the ease with which it could be made, were fully admitted, the application proved fruitless.

After all that has been done within the past fifteen years by many proprietors in providing improved cottages on their estates, there are yet numbers who need to be made aware of facts which exist on their own property,† and there is reason to fear that, with regard to others, their obligations must be pressed home in such a way as they doubtless would be were the Registrar-General enabled to instance flagrant cases of neglect, and to show what the results are by unquestionable facts. I cannot help, therefore, regarding the loss of this opportunity as a matter for very serious regret, especially when it is remembered how little the Government can do directly towards the domiciliary reform, so greatly needed amongst the masses of the population.

By legislative enactments can alone be prevented the recurrence of those hardships and other great evils which have arisen out of the selfish system pursued in some "close parishes," where cottages have been pulled down in order to obtain relief from a burthen which is thereby thrown upon a neighboring parish, regardless of the sufferings endured by the laborer, who is often, as a consequence, compelled to walk several miles to and from his work. A calculation of the positive loss from the waste of valuable time and strength thus expended was made by the late Sir Robert Peel; and yet, how many who have laborers in their constant employ need to be convinced that it is as much their interest to care for them in regard to their dwellings, as it is to provide well situated, healthy, and convenient stables for their cattle?

The only other legislative measure which I shall point out as being especially:

* The power referred to was conferred in 1851, and under the supervision of the able medical officer of health it is exercised with great benefit to the poor, as a diminution in the returns of mortality from 25 to 23 in 1,000, traceable to this and other sanitary measures, abundantly prove.

† A system of registration of the actual condition and extent of accommodation in existing cottages has been suggested by Dr. H. Acland, of Oxford, which, if generally adopted by proprietors, would, doubtless, elicit some very startling facts. Mr. Parker, of Oxford, will supply these forms of registration on the receipt of a postage-stamp.

needed, is one that would operate generally to prevent the building of small houses on undrained ground, and without proper sanitary arrangements; such a fruitful source of sickness and consequent expense to the public ought, without doubt, to be entirely interdicted. It is an evil, the extent or the magnitude of which, it would be difficult to estimate with accuracy.

As bearing on this, and several other points which have been referred to, I may quote the words used two years since by a right hon. gentleman, the present First Commissioner of Works—"As yet the necessity of protecting life from the influence of poisonous dwellings has not practically been acknowledged, though the principle is in the statute book."

It is unnecessary to occupy your time at any length with what has been done for the object under consideration by the Governments of other countries; that of Belgium has been aided therein by the zealous efforts of M. Duquetiaux, and in numerous other instances our example has been attentively watched, if not followed. In some of them the pleasure has been afforded me of tracing the results of my own labors in this cause, abroad as well as at home, rendered in the former case mainly through personal intercourse and the circulation of translated papers.

2. In noticing the measures which ought to be adopted by *landowners and employers generally* for the benefit of their dependents, such as tenants, or workpeople in their constant employ, I feel that a quotation from the letter of the late Duke of Bedford, given at length in my former paper, is the best reply which can be made to the excuses of many for their neglect of duty in this respect—"Cottage building, except to a cottage speculator, who exacts immoderate rents for scanty and defective habitations, is, we all know, a bad investment of money; but this is not the light in which such a subject should be viewed by landlords, from whom it is surely not too much to expect that whilst they are building and improving farm houses, homesteads, and cattle sheds, they will also build and improve dwellings for their laborers in sufficient number to meet the improved and improving cultivation of the land. To improve the dwellings of the laboring classes, and afford them the means of greater cleanliness, health, and comfort in their own homes; to extend education, and thus raise the social and moral habits of those most valuable members of the community, are among the first duties, and ought to be among the truest pleasures, of every landlord."

The example which was set by his Grace in the building and improving the cottages on his estates in seven different counties involved, in the course of eight or ten years, an outlay of about £70,000. Another instance of princely expenditure on the same object is that of the Duke of Northumberland, which has been estimated at £100,000. The average cost of the cottages built by these two noblemen may be stated at from £90 to £120 each.

The question of a *remunerative return* on the outlay in building cottages in agricultural districts is one which impinges so closely on that of the rate of wages, that I shall not venture on its discussion. It would be hopeless to argue this point with those who think that wages of 8s. to 9s. per week can properly maintain a working man and his family, as well as pay the rent of a healthy dwelling. With the greatly increased prosperity of agriculture, such a rate of wages appears to me unaccountable, and altogether at variance with equity and sound policy.

The efforts made by some of our great manufacturers for the benefit of their workpeople have been in proportion to those just noticed. Many owners of mines, quarries, and works of various kinds, can bear testimony to the great benefits resulting from their expenditure in providing proper dwellings for the people in their employ.

The same has been the case with reference to the cottages built in considerable numbers by several of the leading railway companies.* The secretaries of some of them, in speaking on the subject, have referred particularly to the great advantage of having the men ready at hand, in case of need, and removed from the temptation presented by public houses. Government has acted on the same principle in regard to the Police force, and, taking the idea originally from the model lodging-houses, barracks have been built, generally for those of them who are unmarried—a good precedent, which might, doubtless, be adopted in many other instances with much advantage to both employers and employed. In such cases a sufficiently remunerative rent can generally be charged, and its payment guaranteed by a deduction from the wages.

On the Continent, our example has in this respect been much followed. At the Paris Exhibition, 1855, there were many views of workmen's dwellings erected by their employers. In two of them particularly, the leading features of the Prince Consort's Exhibition Model Houses were strongly marked. One, constructed in 1853, at Bourges, provides accommodation for four families on the ground floor, and for twenty single men on the upper floor. The other is that of the Cité Ouvrière des Verriers, at Escautpont, near Valenciennes, which comprises, in a central building, schools and other apartments used in common, with some of the dwelling-houses, but the latter are chiefly contained in two detached blocks, forming the sides of a hollow square. In these buildings the frequent repetition of recessed entrances, with galleries to the upper floor, is, from the contrast of light and shade, productive of a novel and good effect.

I have visited dwellings for workpeople built by their employers in Brussels, at Liege, and also at Mulhouse, one of the chief manufacturing places in France, where the idea of constructing a Cité Ouvrière originated in the receipt of a translation of my former lecture, sent by order of the Emperor. It was commenced in 1853 by an association of manufacturers, headed by M. Jean Dollfus, on a scale more extensive and complete than that of any similar establishment in France. A spacious road, planted on either side, runs between the main groups of cottages, and parallel roads run behind them. The houses are chiefly arranged in detached blocks of four dwellings each, placed in the centre of a square plot of garden ground, which is divided equally between the tenants; two of these dwellings front the main central road, and two the minor or back road—an economical arrangement in regard to cost of construction, and one which admits of good internal ventilation, though not as perfect as when houses are built in pairs. The dwellings, though not precisely uniform in their disposition, have mostly a wide entrance, fitted up with a cooking-stove and sink; beyond is a staircase, leading to three bed-rooms and a closet. The remainder of the ground floor is devoted to the living-room, with a large recess behind the staircase of sufficient dimensions to contain a full-sized bed; this compartment has a side window, and, in some cases, being partitioned off from the living-room, it forms a small separate room. There are, besides these, several rows of double houses, built back to back, each having a narrow strip of garden-ground; their arrangement cannot be commended as consistent with good

ventilation, and the general appearance of the tenants indicated a decidedly inferior class of occupants, with want of cleanliness and propriety. In the summer of 1860 there were completed 480 houses, two-thirds of which had been sold to the occupiers, and 90 more were in the course of construction, land having been bought for 800 in the whole. Baths, a wash-house, and a bake-house, as well as a public kitchen and *restaurant*, conducted by a Société Alimentaire, were opened when I visited the cité in 1856; since which have been added a reading-room, a school, a lodging-house for unmarried men, and one for men on the tramp.

The outlay on the roads, fencing and planting, was defrayed out of a Government subvention of 300,000 francs, or £12,000; being a part of 10,000,000 francs appropriated to such purposes by the Emperor, with a view to stimulate the work in France. The tenants have the option of purchasing the houses by the gradual payment of their cost price, which ranges from £72 to £120 each, and two-thirds of them have done so, to the very marked benefit of themselves and families, and with the further good result of providing the funds necessary for continuing the buildings, without increase of capital on the part of the projectors, to whom, as well as to M. Emile Muller, of Paris, from whose plans and under whose direction they were built, the greatest credit is due.

I have thought that these details may be useful, and, perhaps, suggestive, with reference to schemes often projected for building workmen's dwellings in large numbers out of our own metropolis, with a view to their occupants being conveyed to and from by cheap railway trains. With the same object I notice having seen near Paris an entire village, then all but completed, which had been built by a Parisian tailor for his workpeople. It comprises wooden houses, or chalets, for 76 families, 28 intended for single, and 48 for groups of families, each occupying a separate tenement, and having two, three, or four rooms. There are two spacious workshops, and although some defects might easily be pointed out, an air of neatness and order gives the whole a very pleasing effect. Here the work, which is sold in the very heart of the city, and has hitherto been done by workmen residing with their families in miserable, unhealthy, and, at the same time, high-rented dwellings, will be done under the advantage of abundant light and pure air, greatly to the advantage of the consumer, the employer, and the employed, as well as of the pockets of those who have generally to bear the burden of supporting the working man and his dependents in case of sickness.

It would be easy for me to illustrate by many other examples, at home and abroad, the practical recognition by those who have working people in their regular and exclusive employ, of an obligation to see that they are properly housed, and, at the same time, to show the benefits resulting therefrom to both parties. But other measures have yet to be noticed, which will be grouped under the last head, viz.—

3. Those which originate from benevolent motives, and are undertaken either by Associations or by individuals, in order to aid in helping themselves those who need such aid. My former paper recited the establishment by philanthropic individuals of two associations, one of which commenced in 1844 and the other in 1845, the building of improved or model dwellings for the working classes in the Metropolis. Highly beneficial as these societies have unquestionably been in the pioneering work of this movement, experience has, in regard to one of them, confirmed the opinion I held when undertaking, in 1844, the duties of its honorary architect, that it should aim at doing a little and doing it well, so as to be in deed, and not in name only, a model society, rather than attempt more than from its constitution it could be reasonably expected to accomplish, with such results as would commend it for imitation. The society to which I refer is that for Improving the Condition of the Laboring Classes, which has constructed under my direction four distinct ranges of new buildings, accommodating 97 families in separate dwellings, and providing 94 rooms for single women, as well as lodgings for 104 single men, and a public wash-house with baths. Whilst in three distinct localities, old houses were renovated and fitted to provide lodging for 158 single men. The expenditure on these several dwellings and lodging-houses has been £36,405 15s. 11d., and they have all been in full occupation since 1851.* Subsequent to 1853, when I went on the Continent, three entire courts in different localities were taken, and the condition of the houses, which, in two of them, were indescribably filthy, and occupied by the lowest class of tenants, was completely changed. The number of rooms collectively contained in these courts is 275, and there is also a single men's lodging-house with 40 beds. The total outlay on these three courts has been £7,226 1s. 4d., and the net return for the year 1859, after deducting all expenses and repairs, was £249 18s. 11d., or 3½ per cent.; whilst from the Society's new building in

* The receipts and expenses of the different buildings, exclusive of that in Portpool-lane, during the year 1852, for which I can personally speak to the management of this Society, having then acted on its Committee and as its honorary architect, were:—

Bagnigge-wells: self-contained houses and flats for 23 families, and rooms for 30 aged females. Outlay on land £1,045; building, £5,325.	Receipts	£375 7 7
	Expenses	82 6 9
	Net return	293 1 0
Streatham-street: houses for 54 families built on flats, fire-proof, and with galleries. Outlay, ground-rent, £50; building, £8,916 16s.	Receipts	724 7 4
	Expenses	224 18 1
	Net return	499 9 3
George-street: lodging-house for 104 men, six stories high, including basement offices, and four floors of dormitories. Outlay, land, £1,200; building, £5,226.	Receipts	618 11 4
	Expenses	366 6 2
	Net return	252 5 2
Charles-street: lodging-house for 84 men formed out of three, old houses, renovated and thrown into one. Outlay on repairs and furniture, £1,163 14s. 2d.	Receipts	418 0 4
	Expenses	233 5 2
	Net return	184 15 2
King-street: lodging-house for 22 men. An old house, on the repairing and furnishing of which £135 was expended.	Receipts	111 9 8
	Expenses	73 13 11
	Net return	37 15 9

The rents received from these houses have varied but slightly since they were opened up to the present time, and they are generally well filled, the families changing but seldom. The cost of repairs is not included in the expenses above stated; they should be taken as averaging ½ per cent. on new, and generally from 1 to 2 per cent. on old buildings.

† This return, though a considerable increase on that of the previous year, is not encouraging, the property being old and leasehold, and no provision for a sinking fund having been made.

* The Great Northern has built 150 cottages at their station, near Peterborough, and the Brighton Company has built and acquired nearly 400 cottages for their men.

Streatham-street for 54 families, where the expenditure was £8,916 10s., the corresponding net return for the same year was £420 18s. 8d., or 4½ per cent. on the outlay, and from the model lodging-house for men in George-street, St. Giles's, the return was 4 per cent. on the outlay, and had been 4½ per cent.

The Metropolitan Association for Improving the Dwellings of the Industrious Classes, which is the other Society referred to, had, up to 1860, expended on its ten distinct ranges of dwellings £89,613 14s. 10d., of which £71,322 2s. 6d. was laid out on six separate blocks of dwellings in different parts of the metropolis, accommodating 305 families; the net return from these buildings for the year ending 31st March, 1860, after deducting all current expenses and repairs, amounted to £2,687 4s. 4d., being about 3½ per cent. on the outlay.

On two lodging-houses for single men—one of them new, which has accommodation for 234, and the other old, which provides for 128—the return, owing to the want of sufficient occupants, has been very unsatisfactory; involving, indeed, a considerable loss, which proves that the buildings are either too large, or in some way unadapted to the class of men frequenting their neighbourhood.

It is worthy of observation that the same result has attended a similar lodging-house which I have seen at Marseilles, built outside the town, for 150 men, too far from their daily occupation; whilst many such houses elsewhere, on a smaller scale, accommodating from 50 to 100 men, and near to their work, have fully succeeded; in some instances they have been gradually increased, which is the case at Leeds and in Liverpool. Of two adjoining houses, built on the Boulevard de Batignolles, in Paris, to accommodate together 203 men, and having on the ground floor a restaurant and café, one was closed three years since. In this instance, however, the failure is, doubtless, in some degree attributable to defective management.

From the experience of these two Societies in the metropolis, it would appear that old buildings may be renovated and fitted up for men's lodging-houses, with the prospect of, at least, a fairly remunerative return on the outlay; for in the instance of Charles-street lodging-house, it has averaged from 12 to 15 per cent., though, in some other instances, the return has been under 5 per cent. Whilst the putting of old courts and blocks of dwelling-houses for families into a good sanitary condition, unless they are obtained at an unusually low price, is not likely to yield a satisfactory return on the outlay, at all events, if done by societies and taking 4 to 5 per cent. as the lowest rate of interest which such investments ought to yield, after provision has been made for repairs,* and a sinking fund to pay off the capital, which it is obvious there should be, especially in the case of leasehold property.

Highly valuable as must be the results of the transformation effected in two of the courts referred to, where filthy dens became decent and healthy dwellings, the actual benefit arising out of these efforts was not conferred to the extent which might be supposed on those who were the occupants of the courts when they were taken by the Society; a considerable portion of them having been ejected in order not only to reduce the number of occupants within a due limit, but also to secure a more eligible set of tenants. My own conviction is very decided that the owners of such property should be compelled by the law either to put it into a healthy condition, to close it altogether, or to part with it at its fairly ascertained value to those who may be willing to undertake the necessary outlay. At present, the fact of such property being inquired for by philanthropic persons gives to it a fictitious value; and in numerous instances within my own experience, the object has thus been defeated, or the price paid for the property has been so high that, with the outlay on repairs, its net return is such as to discourage any further attempts of the same kind. An Act of Parliament passed in 1855, applicable only to Scotland, contains a clause which, in a certain degree, meets such cases; but it appears to me that the principle involved in the entire prohibition of the sale of articles of food, when in an unwholesome condition, applies, with undoubted equity, to dwellings, and that it is the only way of effectually remedying the evil.†

PROFESSOR SMIRKE'S LECTURES ON ARCHITECTURE AT THE ROYAL ACADEMY.—LECTURE II.‡

I MUST not pursue this subject further than just again to remind you of the æsthetic advantages afforded by the old mode of treating the chimney hearth. The contemptible little pinched-up compositions of thin, flat, marble slabs which now usually decorate this social centre of domestic hospitality, contrast most painfully with the large and generous treatment of the fireplace, and with the sculpture and painting which were lavished, during the period to which I am alluding, on this place of honor in the halls of former days.

Although time has left us but few illustrative examples of these fireplaces in England, we have but to visit Nuremberg, or any of the older cities of the Netherlands, to find noble examples still surviving the wreck of time. Even the great hall in the Hotel de Ville, in Paris, probably familiar to you all, which is of the time, probably, of Francis I., affords a most remarkable example, sufficient to dwarf down into insignificance every similar object I have met with in England, although I am aware there are examples of the time of Henry VIII., of Elizabeth, and of Charles I., of no mean character.

At the magnificent Châteaux of Blois and of Gaillon, the most remarkable features are their gardens; they are, of course, laid out in the formal artificial manner usual in the gardens of the early period to which these examples belong. In the centre of both these gardens is a fountain of much elegance of design, although the jets of water issue from sources not altogether unobjectionable. The practice of throwing the water from the mouths of human masks cannot be defended, although it is a very common expedient. It was suggested probably by the gargoyles of medieval times, when monsters, often of the most preposterous design, were made to emit water both in fountains and at the eaves of roofs; but these also may claim a far more ancient origin. We know how commonly the rain water which fell on the roofs of Greek temples were made to issue from the mouths of lions carved on the cyma of the cornice; they were, in fact, the true gargoyles of the Greeks. The practice may, perhaps, be partly due to æsthetic causes, for there are few subjects more captivating to the sculptor than the lion's head, so admirably sculptural in the breadth and even in the grandeur of its details. But still another and remoter origin may be assigned to the practice. The overflowing of the Nile, which, as you know, annually renews that arid country, and gives occasion to so much periodical rejoicing, occurs when the sun is in Leo, a coincidence quite sufficient to lead the Egyptians to adopt the lion's mouth as the source from whence their liquid treasures were made to issue.

At the fountains of the Château d'Anet jets of water are seen issuing from Diana's bow, and from the horns of her accompanying stag. I am, indeed, bound to admit that the rude artists of this not highly polished nor very fastidious age caused jets to flow from still more exceptional, although, perhaps, more natural sources.

These devices are common enough at the period of which we are speaking, and can only be excused on the ground of the extreme difficulty (which all must have felt who have

tried their hands at designing fountains) of devising any perfectly unobjectionable, and yet ornamental mode of emitting the water. But, perhaps, the most notable feature in these early French gardens is the arcade, or covered way, which encloses the whole area. As a gallery offering a sheltered walk at all seasons of the year, whether too hot or too wet for out-of-doors exercise, these covered walks must always have been a welcome refuge. The luxury was probably borrowed from the Italians, with whom these arcades or colonnades had already become a favorite adjunct to the villa. They, also, in their turn, may claim a classic origin. Those who have read Pliny's description of his Villa Laurentina will remember how he dwells on the crypto porticus as one of the luxuries of his favorite retreat—a luxury which, though preserved in the cloisters of the middle ages, seems to have been, without good reason, overlooked and neglected in modern gardening.

In these French gardens I also perceive indications of the pergola, or trellised walk, which forms so elegant as well as so commodious a part of almost every well appointed Italian garden.

I will not further detain you by dwelling on the other beautiful châteaux represented in these volumes, although they present to us most attractive objects, such as Château Chenevont, one of the most theatrically picturesque buildings that can be imagined; Château Chantilly, perfectly medieval in its general design, although in its details showing strongly of the more modern style that Catherine de Medicis encouraged, and had, in fact, introduced into France; Château d'Anet, less Gothic, but equally varied, original, and picturesque.

Such are the contents of these curious and valuable volumes. A careful and critical examination of them will satisfy any impartial mind that they take a very narrow view of the subject who fancy that all architecture necessarily divides itself into the Classic and the Gothic schools, and that, therefore, if we reject the one we must necessarily adopt the other. Such, happily, is by no means the case. I have on a former occasion endeavored to show that such was not the case when the quattrocentists of Italy put away Medievalism in art with the casque and gauntlet which they had outgrown. They were too good artists and too sensible men not to perceive that modern civilisation required something more than a return to columns and pediments, and they accordingly struck out a style of design perfectly original, and in many respects more beautiful than anything that had preceded it.

In the same way we find that when, a little later, the artistic and inventive genius of France was directed to the production of designs in the renaissance style, it never occurred to their fertile minds that it was incumbent on them to plunge into a purblind system of copying the works of former times. On the contrary, we see in these buildings of the time of Catherine that a style of great beauty and force was possible, which yet was equally remote both from Greek and Gothic. True art is ever young and productive; it needs only adequate incentives and encouragement to warm it into life. A well stored portfolio of photographs would turn any man, however uneducated in art, into an architect, if the careful repetition of old forms be all that is required of him.

As I have devoted this evening to looking into a few books, I must be excused if in closing one volume and opening another I find myself following a somewhat desultory course. It does not, however, appear to me to be necessary to observe any especial historical sequence. The book which next comes to hand is a splendid volume, of earlier date than that to which we last adverted, and is not without a certain amount of romance in its history, for it consists of verses composed by the Duke of Orleans after his capture at the battle of Agincourt, and with which composition he beguiled the tedium of his imprisonment in England. The illustrations are beautifully executed miniatures, and of great interest as explanatory of the buildings, habits and costume of the period. One of these illustrations is of especial interest, as it presents a view of London in the fifteenth century. It is taken on the banks of the Thames, and represents the Tower in the foreground and the bridge in the middle distance. The very rapid shoot of the current at the bridge is plainly indicated. At a short distance from the Tower is seen the creek of "Bellyne's gate," on the banks of which creek and below bridge is a considerable building, probably the custom-house. The architecture of this building is portrayed with great minuteness, and is manifestly drawn from the actual objects—not conventionally, but with considerable effort at correctness of representation. It is worthy of observation that the lowest story consists of an arcade of perfectly Renaissance character, the arches being circular, or nearly so, springing from ordinary columns apparently very much like Roman Doric.

The superstructure, however, is of quite medieval character, presenting a series of steep gables of dissimilar designs, and with the windows apparently mullioned. The perfectly Italian aspect of the lower part of the building seems to me to be conclusive evidence of the existence of the style of the Renaissance in England very much earlier than is usually supposed.

The Porta Honoris at Cambridge is generally pointed to as one of the earliest, if not the earliest, example in England of the quasi-classic style. This gateway, however, must be nearly 150 years later than the building near old London-bridge, so carefully delineated in this illumination.

Now that I am touching on the subject of illustrated manuscripts, I need not omit allusion to the remarkable book known as the "Codex Aureus." It forms part of the Royal Library collected by George III., and is certainly one of the gems of that collection; it has many claims on our attention, inasmuch as it appears to be beyond a doubt that it was executed for Charlemagne; it is enriched with magnificent illustrations, which may be fairly presumed to be specimens of the highest art which Europe in the beginning of the ninth century was capable of producing, and is, moreover, considering its great age, in excellent preservation. The prevailing character of the architectural features is manifestly what it is usual to designate as Romanesque. Each page represents one arch, divided into three subordinate compartments by slender pillars carrying three arches. This arrangement of arches seems to have taken its rise somewhere about the period in the history of architecture with which this volume is contemporaneous; perhaps, indeed, even earlier.

The practice of building small arches in a continuous series, springing from the capitals of small pillars, bears a far earlier date. We find them in abundance at the Palace of Diocletian. Such small arcades occur, too, at the building near Ravenna, called Theodoric's Palace, and a continuous range of them originally encircled the multangular tomb of that monarch. These small arcades, arranged in successive, superimposed orders, came to be used to excess, as you, no doubt, well know, and covered the towers and gables of the Lombardic and subsequent ages. I may add that in paintings and mosaics of so early a date as the fourth century, represented in Seroux d'Agincourt's great work, these arcades abound.

But in the illustrations of a manuscript preserved in the Laurentian Library, at Florence, to which the date of the fourth century is assigned, a more distinct foreshadowing occurs of the Gothic mullioned window. It represents a large semicircular arch, comprising within its span four minor arches, thus dividing it into four narrow openings. It is true, the head of the large comprising arch is blanked; there is shown on it a circle, probably decorative only, and not perforated; but the transition from this to an ordinary four-light Gothic window is easy and natural. In the "Codex Aureus" to which I have been referring, we have very plainly this germ of the Gothic window; and we have it even more distinctly developed in MSS. of the ninth century, of which representations are given by D'Agincourt. But not only were these small arcades the putative parents of mullioned windows, to them, also, it can hardly be doubted, we owe the triforium of our Ecclesiastical architecture. I cannot refrain from here reminding you of the analogous use of these subordinate arcades in the Westminster Hall, as built by our William Rufus. In the twenty-sixth volume of the "Archæologia" you will find the representation of that triforium story forming an open arcade passage-way, obtained in the thickness of the wall. This curious feature in the domestic architecture of the twelfth century I had the pleasure of being the first to explore and delineate, when the interior of the walls of Westminster Hall was opened out and exposed to view, under my brother, Sir Robert's, directions, with a view to the refacement of the masonry of those walls in 1837.

I have, perhaps, detained you too long in thus tracing the pedigree of these mural arcades, but they are of some importance in the history of architecture. It may be difficult to point to any feature more strongly characteristic of Medieval architecture, or more definitely distinguishing it from strictly Classic art.

In the singular works of early Christian architecture, to which I have been alluding, it is impossible not at once to recognise a strong savour of Byzantine art. There is, for example, in the "Codex Aureus" an almost infinite variety of frets and friezes introduced of

* The average expenditure on repairs to new buildings should not exceed ½ per cent., and may often be less, whilst it would not be safe to calculate those required to old buildings at less than 2 per cent. on the average.

† To be continued.

‡ Concluded from page 70.

a quasi-Classical character, all most carefully and elaborately executed, and with a manual dexterity and precision which seem to imply great practice in such works. The Greek labyrinth fret occurs in utmost variety, and those interlacing patterns that stamp a peculiar character on the art of ornamental design in this Byzantine style occur in these illuminations in utmost profusion. Whether accompanying Runic inscriptions in Ireland, in Norway, or elsewhere, or whether seen carved in stone in the earliest Christian buildings of Lombardy, or worked in mosaic on the walls of Greek churches, or depicted upon vellum in these beautiful manuscripts now under our consideration, there is a similarity of design and a general agreement in the manner of treatment which is certainly well worthy of observation. What adds especial interest to this curious kind of ornament is that it was not, apparently, derived from or suggested by any similar ornament in the preceding Classic school. Could it have been traced back to ancient Rome, we should not have been surprised at its occurrence in localities so widely apart, and in styles of design so widely differing; but nothing, as far as I know, occurs in Roman art from whence these intricate interlacings could have been derived—unless, indeed, we may suppose that the *guilloche* was the parent of this ornament, which would, in that case, take back the idea to Athens itself, and to how much remoter a period I know not. Even Assyrian art is not without traces of it.

Whether so derived or whether it was the original product of a Teutonic or a Byzantine mind, certainly its wide prevalence is remarkable. It seems not unlikely that the facilities which these interlaced ornaments afforded of producing the device of a knot having no ends, would recommend it to the favor of the early Christian artists as an emblem of eternity, as well as of brotherhood. But whatever its origin, the idea was certainly most prolific. Besides being productive of a variety of mere ornaments, such as we see on this MS. of the time of Charlemagne, it suggested no doubt the monsters devouring their own tails, which we see so commonly portrayed in mediæval sculpture; and the true lovers' knots depicted in a thousand familiar, although unmeaning, shapes on our walls and ceilings down to the time of Elizabeth, and, for aught I know, to the present day.

Time warns me that I must not, this evening, introduce to your notice any more of the literary and artistic treasures stored up in our magnificent national collection. I am well aware of the very superficial nature of these few slight notices: they present to you but the faintest glimpse of the almost endless stores that the liberality of country has been enabled to accumulate under the guidance and with the assistance of her best scholars. In calling your attention to the few books which I have named, I am, I fear, subjecting myself to the sarcasm of the old Greek author who tells us of a certain "Scholasticos" who, being desirous of recommending a house to the favor of his friends, carried about with him a brick or two by way of specimen of the entire mansion. Yet scanty and very inadequate as the samples may be which I have this evening laid before you, I feel sanguine in the belief that my few remarks and criticisms will not have been made in vain, if they have produced in your mind a desire to seek for further satisfaction at the fountain heads; to consult them for yourselves, and to liberalise and enlarge your studies by a wider field of investigation.

A careful contemplative study of the causes of the almost awful sublimity of the Colosseum, for example, is calculated perhaps to encourage and even to generate a greatness of manner, and to elevate the artistic tendencies of the mind; and to teach us that the grandest effects in our art are far more readily attainable by simple general forms, than by resorting to that excessive elaboration and subdivision of details which (perhaps I may be permitted to say) is one of the least commendable tendencies of the present day, and against which it would be well that you should be on your guard.

Then, again, a critical examination of the interesting productions of the age of the Renaissance in France—an examination so greatly facilitated by the two beautiful volumes of Catherine de Medici, which I have been adverting to—is well calculated to fertilise the mind of a young architect, and to show to him how the combination of two very different kinds of beauty is capable, in the alchemy of genius, of being made to produce still another beauty—a *tertium quid*—differing very materially from its two components, yet partaking of the merits of both.

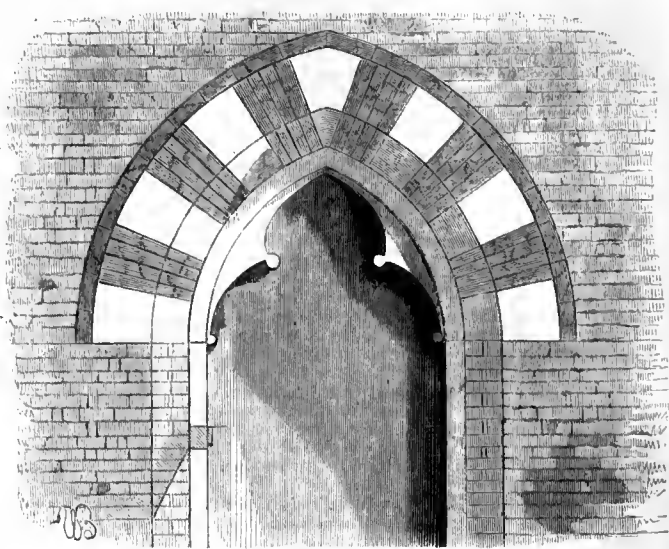
Such an examination would, furthermore, satisfy him that it was no mere love of innovation, no mere freak of fashion, that led our forefathers to lay aside in their architecture the stern and rigid air of mediævalism. They abandoned mullions and tracery in their windows, and made them wide and square and open—not in sport and for the sake of a frivolous change, but because they were beginning to learn to appreciate more fully the value of light and air, and because they began to perceive that there were other means of excluding an enemy and securing their personal safety and an inviolate hearth, besides loopholing and crenellating their dwellings. An inquiry into these great changes in their habits of building is a curious and not an unprofitable inquiry. It is common enough to hear it said that the revival of a taste for classical literature led to the study and subsequent adoption of classical architecture. Whereas the two revivals were, in truth, strictly contemporaneous; and it is by no means improbable that they may be regarded, not as one being consequent on the other, but that both were necessary results of a common cause—namely, the advance of civilisation, involving the acquirement of new habits and new wants.

The other volumes of which I have this evening made mention have an antiquarian rather than a practical value, and to that extent are, no doubt, less suitable subjects for me to urge on your attention here. Yet those manuscripts are samples of a great store of similar works which our national museum may be justly proud to possess, and which, whilst they are of the highest literary and historical value, must ever be precious also in the eyes of artists, inasmuch as the illuminations which adorn their pages represent faithfully the condition of the fine arts during the mediæval period, and are, as it were, the golden link that connected the ancient with the modern schools of Painting and Design.

ACCIDENTS ON FRENCH RAILWAYS.—We find the following in the *Revue Contemporaine*:—"On the Northern, Strasburg, Western, Orleans, and Mediterranean lines of railway, 2,130 trains run every day, and the distance performed is altogether 192,000 kilometres (five-eighths of a mile each), making a total of 777,450 trains, and more than 70,000,000 of kilometres in the year. The number of passengers conveyed on those lines in the years from 1850 to 1860 was about £310,000,000, and during that period the loss of life by accidents was 44, or one out of 7,000,000. Does there exist a human undertaking where material forces are used in the midst of difficult circumstances, and with the co-operation of such a considerable number of men, which would engage not to make a greater number of victims? The above figures, taken from official sources, have an eloquence which cannot be easily weakened, and against which affirmations too lightly brought cannot prevail. What additional force do not these calculations acquire when they are compared with the number of carriage accidents which take place in one year in the public thoroughfares of Paris alone? In 1860, for instance, the official statistics inform us that the casualties of that kind amounted to 929, which occasioned the death of 30 persons, and serious injuries to 579 others. Thus the circulation of carriages in Paris has led to almost as many violent deaths in one year as the circulation of the French railways in ten years."

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WINDOW, SAN PIETRO MARTIRE, VERONA.

THE little chapel of San Pietro Martire, now used as a college, contains many architectural gems, one of which, a window-head, we have engraved. It is very simple, but none the less beautiful. The materials are brick and white marble. The section of the jamb is hardly more than a splay. The trefoil in the arch, cut out of a single block, is a charming bit of design, and gives a degree of richness of effect that five times the amount of carving would not necessarily procure for it. The height of the window is about 14 feet, and the width, as nearly as we can recollect, about 2 feet 6 inches. Adjoining it there is a circular window, designed with equal skill, and over the entrance is the well-known canopied tomb of G. da Castelbarco. The date of the window is the first half of the fourteenth century.

SOUTH PORCH OF ST. GUDULE, BRUSSELS.

DEDICATED originally to the Saints Michel and Gudule, this collegiate church is now better known as St. Gudule. It is situated on a rising ground once called Molenberg, and was founded in 1010. The choir and transepts were completed about 1270, the nave in the fourteenth century, and the western towers soon after 1500. Many alterations have, however, been effected since that time. The north and south windows of transept—the latter is shown in our illustration—date 1557. The precise date of the south porch is not recorded.

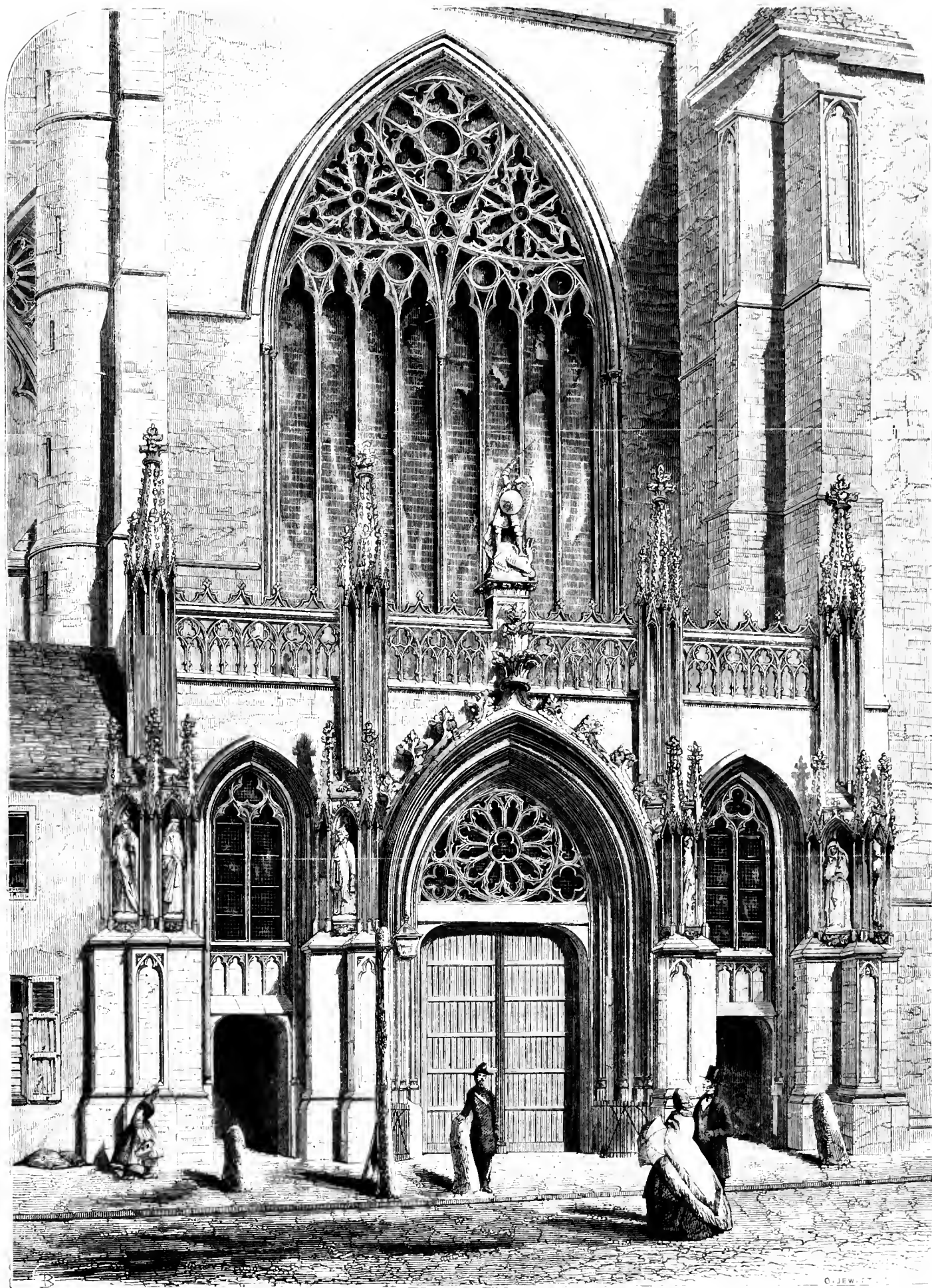
FIRES IN LONDON DURING THE PAST YEAR.

THE report of Mr. Shaw on fires in London during the past year gives the number of totally destroyed premises as 53, being 25 in excess of the same list for 1860, and 13 in excess of the average proportion for the 28 past years. Of the premises burned, 20 were from two to seven miles distant from the nearest station; 25 were used for the carrying on of hazardous trades, such as cabinet-makers, carpenters, hay and straw salesmen, steam saw-mills, &c. Three were completely on fire before the arrival of the engines, and of the remaining number, some through imperfect construction, and one (Cotton's wharf) from its great magnitude and inflammable contents, baffled all the efforts of the firemen.

The total number of calls received during the year was 1,409, of these 80 were false alarms, 137 proved to be only chimney alarms, and 1,183 were fires, of which 53 resulted in the total destruction of buildings, &c., 332 in considerable damage, and 798 in slight damage. The fires of 1861, compared with those of 1860, show an increase of 127, and compared with an average of the 28 years during which the establishment has been in existence, the increase is 391. This list does not include trifling damages by fire, not sufficiently important to require the attendance of firemen. Of these no record is anywhere kept, but they, it is considered, may be estimated in round numbers at 4,000; neither does it include the ordinary calls for chimneys on fire, which may be roughly estimated at 3,000.

With regard to the fire at London-bridge, which occurred on the 22nd of June last, and resulted in the almost total destruction of thirty-three buildings, there is every reason to believe that, but for a serious delay and deficiency of water, and some violent explosions which took place at the commencement, the fire would have been confined to the building in which it originated. In six of the cases mentioned in the totally destroyed list, the supply of water was either late or insufficient.

The land steam fire-engine continues to render valuable service. In this engine a great difficulty has hitherto been experienced in getting up steam in a sufficiently short space of time; this difficulty is now obviated by the introduction, inside the fire-box, of a small jet of gas, which keeps the water constantly boiling. By this method two advantages are gained, one is that it entirely does away with the great risk to the boiler and machinery, caused by the sudden expansion which takes place when steam is raised in fifteen minutes from cold water, and the other is that it insures the raising of sufficient steam in less than five minutes, which is all that is ever required for practical purposes. The three new land steam fire-engines recently ordered of the same makers, Messrs. Shand and Mason, will be finished shortly, and as they will always be kept ready for immediate use by the expedient already mentioned, it is confidently anticipated that they will be found more effective, and, at the same time, more economical than those worked by manual power.



SOUTH PORCH OF ST. GUDULE, BRUSSELS.

MR. DIGBY WYATT ON THE ARTS OF ITALY.*

IN glass, I am sorry to say, there was but little to praise, with the exception, perhaps, of the ruby glass of Piazaro, near Orvieto, the stained glass generally being inferior to contemporary productions in France, Germany, and England; while in cut and cast glass, the form and ornaments were poor and unworthy of notice. How much of the reproach of insignificance in this department might have been removed had the establishments of Murano freely contributed the results of their best exertions, it is difficult to say. Let us hope that whenever the next Exhibition of the products of United Italy may take place, the descendants of those who in the old time thought it no degradation to their nobility to be masters in the craft and mystery of glass making, may successfully vindicate their forefathers' reputation. In Ceramics, however, there was much to interest.

At the head of this branch of industry stood, without a rival, the Marquis Ginori, who now sustains, to his own credit no less than profit, the old factory at Doccia, founded in 1735 by one of his ancestors. In fine porcelain the productions of the establishment leave little to be desired as to the quality of the paste, but the painting is as yet unequal to the excellence of the material. The most remarkable and characteristic of Ginori's productions are the imitations of ancient Majolica, for his improvements in the manufacture of which the Marquis gracefully acknowledges himself indebted to the talents in chemistry of one of his protégés and assistants, Signor Giusto Cinti, whose death in 1855, while scarcely in the summer of his intellectual powers, may be a source of regret, not to the Marquis only, but to all Italy.

Many of these imitations of ancient Majolica, and more particularly of the Fontana and Zuccheri types of it, are so ably executed as to imperil experienced collectors, who are too apt to believe that it is possible to obtain by chance objects for ten pounds, eagerly sought after by many really well informed in such matters who would not hesitate to give ten times the sum for undoubted specimens of the works imitated. Let one and all discard such vain illusions, and beware of either too cheap or too dear "articles de vertu" in Italy.

I was happy to notice that some of the most graceful of the Doccia productions were purchased by Englishmen, and, among others, one of the smallest, but prettiest, by our friend Mr. Crape.

In one of the great difficulties of the potter's art, that of burning large groups in biscuit, and allowing them to cool without cracking, the Marquis Ginori has not proved altogether successful, yet the design and modelling of his principal specimen deserved a more successful treatment in firing.

Although he may be considered as without any serious rival in the production of porcelain, in some of the appliances of earthenware with enamelled glazes he meets with competitors of almost equal ability. Thus, in the revival of pavements similar to those which floor the celebrated loggia of the Vatican, made, it is believed, by Girolamo della Robbia, Bernardino Papi, of Siena, proves himself a thoroughly capable manufacturer. As also in Ginori's revival of the Luca della Robbia ware, others of the Lombard potteries prove that he is not alone in his knowledge of the processes by which such objects were anciently wrought.

In ordinary terra cottas, such as those suited for stoves, large garden flower pots, and architectural ornaments, Bacci, of Florence, Carlo Vanni, of Impruneta, near Florence, Filippo Martinez, of Palermo, and Raffaele Pisagna, of Lucca, exhibit very excellent productions, thereby demonstrating how widely a knowledge of these processes of old repute in Italy is spread.

Nor is it alone in quality that the specimens forwarded by these manufacturers excel, since in price it would be difficult in any other country, I think, to match them. For example, a really graceful stove in terra cotta, burnt by Purlani, and such as, in this country, I believe, would not, probably, be procurable under £3, I had the pleasure of buying for 25 francs, or £1; a much more ambitious and larger stove, of the same kind, by Ginori, was priced 80 francs, or about £3 4s. It is much to be desired that the Committee of Fine Arts for the decoration of the Horticultural Society's grounds at Kensington may find English manufacturers equal to the production of vases and other features for the embellishment of gardens at similarly reasonable rates, since not a few proprietors of more modest gardens throughout the country are craving for such objects at prices a little less extravagant than those they cannot avoid paying now if they would introduce any similar ornaments amidst their shrubs and flowers.

In ordinary tiles of inlaid clays, suitable for mosaic, the Cavaliere Avila Altoviti, of the Val d'Arno, reigns supreme.

The class of fabrics will, no doubt, be so ably noticed by my friend, your Vice-President, Mr. Winkworth, that I need do no more with respect to them than remark that, as far as my powers of observation extend, in none, with the exception of the embroiderer's art, was there any great evidence of able design in connexion with their production.

For embroidery the Italians have long been celebrated, and many specimens were displayed, better, both in design and execution, than any of those French and Belgium examples which have been so largely manufactured during the last century for the glorification of the rites and ceremonies of the Romish Church. One of the most splendid specimens of such work, although destined for regal rather than ecclesiastical use, was to be observed in the hangings for the royal throne, embroidered in the public Female School at Florence; the design for which, being by no less clever an artist than Pietro Cheloni, was of a highly satisfactory description, and the work reflected credit, more particularly upon the widow Bassi, the teacher of the art of embroidery in that school, under whose special superintendence the whole has been executed.

In dealing with the subject of ornamental carving in wood, we have already taken cognizance of one of the most important elements essential to the production of beautiful furniture. There remain, however, two or three special processes, which have been classed by the Florentine Commissioners under the head of furniture, and which merit particular attention.

The most important of these is unquestionably mosaic in pietre dure, glass, &c.; and, the second, that form of mosaic which consists in the inlaying of different colored woods, and which we generally understand by the name of marquetry.

The former of these processes embraces two distinct varieties, the one suited for internal use only, and the other for both external and internal use.

In the first-named class the now Royal, but formerly Grand Ducal Manufactory, for the execution of what we know as Florentine mosaic, naturally occupied the most eminent position.

Having, in a report I was employed to write for the Board of Trade on a class in which the productions of the Grand Ducal Manufactory were included, in the year 1855, gone at some length into the subject, I need not recapitulate the details I then collected concerning the history and character of that establishment. I may, however, state that the same technical perfection which I had then occasion to praise, and the same faults, as it appeared to me, of judgment in the general design of the principal objects which I then pointed out, may still be considered to characterise the productions forwarded to the Exhibition under notice.

Thus the principal object, upon which it is said that vast sums of money and very many years of labor have been lavished—the altar frontal for the Chapel of the Medici, in San Lorenzo—is, it appears to me, altogether a mistake. With extraordinary patience and skill, materials of the most precious kinds have been selected and fitted to one another with microscopical precision, in order to reproduce a picture of the "Supper at Emmaus;" and, after all, wonderfully, but not successfully. In other objects, such as a magnificent table top, in which flowers, fruit, and birds are introduced, in combination with conventional ornament, a very much happier result is obtained. The best understood, however, of any of the productions of the Royal Manufactory, appeared to me to be the fine wardrobe in walnut wood, inlaid with panels or pietre dure, limited in design to almost entirely conventional ornament.

Private manufacturers have during the last 20 years been creeping up in excellence, as the Grand Ducal fabric has been somewhat losing its old monopoly of excellence; and we now recognise specimens forwarded from private studios of almost equal merit to those wrought at the Government establishment; thus, in point of pictorial mosaic, the centre and medallions of the great table executed by Bianchini, are more effective than the *tour de force* of the royal fabric, the "Supper at Emmaus," although perhaps not quite so perfect in execution. In the centre of this table is a picture of the adoption of Giotto by

Cimabue, executed with extraordinary delicacy and dexterity. Among the highly commendable specimens of this class of mosaic are also the table tops executed by Francesco Betti, and the Brothers Lattici, of Florence.

For those whose pockets are unprepared for such drafts as the purchase of any of these splendid works would necessarily make upon them, similar objects, made in scagliola, and producing an equally brilliant effect, may be obtained at greatly reduced prices. One slab, executed by Picchianti and Son, of Florence, none but the most experienced eye could detect as being an imitation instead of an original.

Of the various materials in which pietre dure slabs are inserted, none appear to me to blend with it more successfully than ebony, and this happy union could not be better exemplified than in the beautiful little casket executed by Barzanti, of Florence, which, both in the excellence of the mosaic and the taste with which the object is made up, could scarcely be exceeded.

In addition to mosaics formed with natural stones and marbles, some specimens of an agreeable, though rather too brilliant effect, formed by the insertion of artificial aventurine, made in glass, into marble and metal work, were exhibited by Signori Bigaglia, of Venice, and, being a novelty, appeared to be highly appreciated by the Italians.

The other branch of mosaic based upon ancient Roman and Byzantine processes, is an art which has been steadily kept up in Italy, partly through the maintenance of the great Papal manufactory at Rome, and partly through the necessity of constantly supplying workmen and materials suited for restoring the great monuments scattered throughout Italy and Sicily, embellished both within and without with this luxurious decoration. But it is only recently that an attempt has been made to organise such facilities of production as may enable private manufacturers to offer their works in this department of industry for public sale. There seems every reason to anticipate that this industry will assume large proportions, from the demand existing for such architectural accessories, not in Italy only, but in all the highly civilised countries of Europe. The best specimens were those sent by Salviati and Vincenzo Redi, of Venice—one a representation of St. Nicholas, from St. Sophia, at Constantinople, evidencing a power to reproduce the ancient Byzantine processes; and the other a figure of Christ, from St. Mark's, at Venice, exhibiting an equal mastery over the Greco-Italian processes employed in that cathedral. Another competitor for patronage in this department of industry was Antonio Gazetta, of Venice. In all of these works the difficulty of producing good flesh tints and properly vitrified gold ground mosaic, appeared to be successfully overcome.

Marquetry—(mosaic in woods)—is an art of oriental origin, communicated to and almost entirely monopolised by the Italians for several centuries of the Middle Ages. In the North of Italy it is still highly popular, and both at Paris, in 1855, and the present Exhibition, numerous specimens were to be seen—not in all cases sufficiently quiet in color, or well understood in application, but almost invariably well and boldly executed.

The absence of Gatti, of Rome, whose ivory and other inlay was so highly admired at Paris, is greatly to be regretted, as nothing in this Exhibition is equal to the small cabinet he there exhibited in 1855.

The best specimen of inlay, and probably one of the best of furniture in the whole Exhibition, is presented to us in the table for a grand saloon, made by Giuseppe Fontana, of Pisa. This piece of furniture is in the fine old Siennese style (that which shortly preceded the year 1500), and leaves little to be desired.

The remaining furniture in the Exhibition is of good average quality, requiring no particular remark, if we except the excellent lac-work, in imitation of Chinese, of Luigi Zampini, of Florence.

Some built-work was sent from Genoa, by Jacinto Grosso. In a carved picture-frame, by Lorenzo Papi, of Florence, I observed a particularly pleasing effect, produced by placing walnut wood carved in open work over a gold ground. I need scarcely note how good and cheap, and how well gilt and burnished, the ordinary carved picture-frames of Florence now are.

In carpets the Italians are altogether behindhand; but some of their silks and velvets for upholstery, particularly the latter, are by no means bad. I did not notice any good lace in the Exhibition, but both at Venice and Genoa I have seen modern nearly equal to the old. Some of the fine thread needlework on cambric was exquisite.

In book production and decoration, although the glories of the classic printers of Italy—the Aldi, Giunta, Goliots, and Bodonis—were not perhaps fully sustained, there were many evidences of excellent capability. In bookbinding, particularly, the houses of Vezzosi of Turin, and Binda of Milan, took very high places, both for excellence of work and taste in the application of ornamental design to the requirements of their special branch of industry.

We have already noticed the perfection attained by the Italians in engraving and chromo-lithography, arts now all but indispensable to the perfection of luxurious typography. It remains only to say a word or two in vindication of the national powers in the art of engraving on wood. I observed scarcely any specimens in the Exhibition, but in contemporary publications, and more particularly in the *Giornale dell'Esposizione Italiana*, I noticed many examples of fair average excellence.

Such are a few of the observations which occur to me in respect to the present of Italian industry, as exemplified by the products displayed in the Exhibition at Florence, and with your permission I will now proceed to add a few remarks touching the even more important question of the possible Italian Art-Industrial future as now foreshadowed.

As there can be no fire without fuel, so there can be no fruitful production without education; and it is from the withdrawal of the restrictions which have hitherto tended to discourage every class of practical instruction throughout most of the States into which Italy has been divided, that the probably most prolific source of future benefit is to be anticipated. Thus, in the fine arts, although many costly literary works, such as the "History of Painting," by the late Professor Rossini, of Pisa; the "Illustrations of the Certosa of Pavia," by Durelli, of Milan, by Cassina, of Venice, by Clognara, of Ancient Art, by Canina, of the Museo Borbonico, by the Neapolitan Government; and of the Florentine and other academies, have been produced mainly in answer to a foreign demand, there is an almost entire blank in the contemporaneous supply of what may be understood as school books of art fit to place in the hands of workmen and students. Since the days of Mengs, Algarotti, and Visconti, but few Italian writers have followed closely those theories of esthetics which have largely engaged public attention in Germany, France, and England, and still fewer have endeavoured to methodise and popularise those texts for the practical instruction of the student.

Gioberti's eloquent and learned essays, "Del Buono," and "Del Bello," are far too ethereal to be palatable to the general reader; while the master mind of Nicolini, the early bent of which inclined strongly towards the solution of art questions, as evidenced in his excellent discourses on Orcagna, Michel Angelo, Leon Battista Alberti, on "The Connection between Poetry and Painting," and on "The Influence of the Arts on Social Life," became subsequently engrossed by political, literary, and educational questions, of even more serious import to Italy.

Among modern writers on the subject of the fine arts, the Count Salvatico, the Marchese Ricci, and the Marchese Roberto D'Azeglio, may be considered as having effected the largest amount of good; but there is still much to be hoped for, now that it is possible for the books published in one part of Italy to be read in others, besides those in which, having eluded the Scylla of state censure, they were imperilled and imprisoned by the Charybdis of heavy and almost impassable barriers of state dues and inquisitorial police.

To the workman, however, there are practical sources of instruction, even more valuable than the text books of his art. These are to be recognised in the works of his contemporaries. What can be imagined more instructive for an apprentice than to have placed under his eyes the best performances of his master contrasted with those of other manufacturers? What more beneficial than to be able to examine the productions of those who in any special branch of industry are superior even to the master he has been accustomed to recognise as to him its practical head? Such instruction is to be derived from Exhibitions such as that under notice; and it is to be hoped that the present may be but the first of a long series in which from year to year, and in different localities, the Italians may take stock of their own advancement, and from time to time enjoy opportunities of comparing their own productions with those of other, and, perhaps, in a commercial sense, more advanced, nations of Europe. The tendency and ultimate result of such comparisons and such stimulants will no doubt be in Italy, as their action has already frequently proved in other countries, to convert exceptional into staple productions; and to lead to the confirmation of a manufacturer, treading with hesitating steps the path of novelty, in branches

* Concluded from page 72.

of industry ultimately destined to confer riches and honor on the land in which they may be originated. There is, too, in these Exhibitions a species of combination and subordination of means to a common end, the moral effect of which, for the Italians especially, cannot but be most excellent; and may tend strongly to correct, by a system of aggregation, the tendency to isolation so largely developed, even among the working classes by antecedent social and political restrictions.

It is difficult for any traveler in Italy now, who may be at all acquainted with the great founts of Della Cruscan literature, not to recognize the deterioration which has befallen the noble Italian language—a deterioration commencing, perhaps, with the resplendent epistles of Marini, and continued through the inanities of the *Compagnia fanosissima della lesina*, and of the still more celebrated Arcadian Academy, to the present comparative decrepitude of once vigorous speech. Owing to a want of untrained communication, and of freedom of discussion, oral or written, on any but the most trivial subjects, there have been developed of late years tendencies to cling to defective *patois*, by way of concealing convictions, on the one hand, and to verbosity, as a means of disguising ignorance, on the other hand, which have nourished the weeds of both Italian thought and Italian language, to the choking up of the flowers which were wont to spring so spontaneously from that ancient hot-bed of civilisation. This will, no doubt, be speedily rectified by a free press, and the facility of intercommunication by means of railways, which will ultimately obliterate the provincialisms complained of.

The same general principles of repression that checked the development of thought, that enfeebled the language, and barred the practical usefulness of the middle classes in Italy, condemned, almost as a conspiracy, any attempt in the lower classes to remedy, by combination, the evils incident to their being left, as it were, without those natural leaders in art and industry which the middle classes in free countries invariably supply to the artisan.

Another unquestionable source of probable benefit to the arts in Italy must be recognised in the development of principles approaching to those of free trade, as opposed to old obnoxious tariffs, and in the increase of commerce, and the profits arising from trade and manufacture to be thereby induced; for we cannot forget that it was out of the fulness of business profits, rather than any other source, that the funds were supplied in old times which led to the creation of those noble monuments which gave to Italy of the fifteenth century its pre-eminent position in the history of art and art-industry.

While it is true that a high development of social and political liberty, in cases where the genius of the people is not bent in that direction, it is certain that where the tendency of a population is so strongly set as to have maintained, during ages of repression, and under circumstances of the most antagonistic description, such an amount of capability as is now manifested by the Italians, those germs—dormant, or nearly so, during periods such as those referred to—will fructify a hundredfold under institutions calculated to develop personal independence, and free action in that direction towards which the sympathies and aspirations of an enthusiastic people congenitally tend.

A comparison of the past with the present, and a correct appreciation of the phenomena of each, may certainly justify what has been predicted of the future of Italian art-industry; but there exists yet another source from which as much fruit may be probably anticipated, as from any of the reliable conducing causes to which allusion has been made. Such a source is to be found in what is commonly called "the chapter of accidents." As, perhaps, the brightest, though most sadly tarnished, American genius, Edgar Poe, acutely remarks: "The history of human knowledge has so uninterruptedly shown that, collateral, or incidental, or accidental events, we are indebted for the most numerous and most valuable discoveries, that it has at length become necessary, in any prospective views of improvement, to make not only large, but the largest, allowances for inventions that shall arise by chance, and quite out of the range of ordinary expectation. It is no longer philosophical to base upon what has been a vision of what is to be. Accident is admitted as a portion of the substructure. We make chance a matter of absolute calculation." Without going so far as this writer, we may yet carry a large sum to the credit side of our account from what mathematicians have designated "the doctrine of probabilities."

Thus, then, it is with a hope almost approaching to certain anticipation, and in serious thought rather than glowing sympathy, that I venture to augur, from the combination of the excellence already attained, with the facilities for progress opened by its new political constitution, a future for the arts and industries of Italy, such as may place them on a level with, if not in advance of, the most successful worshippers at the shrine of beauty in any other country of Europe.

It remains for us now, in the last section of this essay, only to endeavour to derive practically the largest amount of benefit we can from the past experiences of the Italians, and from the lessons which their productions, past and present, may teach us in the present day.

The most important of these, it appears to me, is to recognise how, under all circumstances, the Italian demands art, not as a luxury but as a necessity. If he cannot have it in good material he will have it in bad; but in some shape or other his eyes must be gratified with that without which vision would be to him but comparative blindness.

If, for instance, the view from one of his saloons is terminated by blank wall, as is the fate of many of those who dwell in our London houses, rather than let that wall remain a blank he will employ an artist to make him a design of an architectural or pictorial character. That design, if his means permit him to execute in marble, no material will be too costly for him to employ; if he cannot have it in marble he will have it in stone; if he cannot afford it in stone it will be in stucco; if he cannot afford it in stucco he will have it painted; if he cannot afford to pay anybody to paint it he will endeavour to do it himself; if he cannot paint it himself, or afford to pay for its being done, he will cover it with creepers—but supply his craving he most assuredly will. If we could feel the same active want, it is unquestionable that our greater amount of vital energy and greater wealth would lead us even better to supply our cravings than the Italian is enabled to gratify his.

What, then, is most wanting in us is an ardent desire for the beautiful. I am far from saying that this desire does not exist in a large and rapidly increasing percentage of the English people, but with us it is so interjectional a sensation as to lead to comparatively little practical result. The rich man, who sees a picture or statue which pleases him, will buy one or other, or both, but how seldom with the least consideration of special fitness for supplying any particular want, much thought of, long cherished, and carefully determined upon! The nature of such a want, and the best mode of supplying it, will occupy the earnest thoughts of the Italian; but with an Englishman, in a general way, the inclination will be but desultory, and if not supplied at a moment when strongly felt it will pass away, and, perhaps, never meet with realisation at all.

Another lesson of great importance to us may be derived from the fact that, both in the past and in the present, the Italians have never been in the habit of looking at any one art as perfect in a condition of isolation from others. To produce for them the effect of beauty or nobleness, all must contribute. Color is just as essential as sculptural form, and both must be held in subordination by the symmetrical conditions of architectonic disposition of lines and spaces.

We, unfortunately, now see too many of the great monuments of Italian art stripped of half their furniture; but if, from the relics of perishable objects preserved in museums, such as that at South Kensington, we attempt to restore to those denuded monuments, to those ransacked palaces, those "banquet halls deserted," the embellishments we recognise as having formerly belonged to them, we shall at once see that the attainment of a really perfect effect in monuments, the beauty of which was dependent upon the combination of the Fine Arts, could only, in Italian eyes, be properly effected by super-adding with profusion all that the industry and ingenuity of the most skilful workman could produce in the Industrial Arts.

To the union of all the fine arts among themselves, with the industrial arts attending as their handmaids, we must look as the most important element in all magnificence; and if we would emulate the Italians, we must not rest until we have learned to blend all cognate arts and industries in harmony.

The third great merit in the best Italian production, whether in a small article of industry, or in the most magnificent monument, is nobility of inclination.

The mistake, for instance, of building the front of a palace in stone and suddenly dropping off the instant the corner is turned into brick, might occur to even a millionaire in this economical age, but would scarcely have presented itself to a Medici, or a Farnese, in the

old days of Italian magnificence. Not that the wealth, or the inclination to do what is handsome, might be less in the one case than in the other, but that public opinion and system would keep the patrons of old straight, and allow those of to-day to fall into what cannot but be regarded as an architectural meanness.

It would be, of course, too hard to point to any particular cases where hundreds are almost daily guilty of committing similar solecisms in taste, but unless we are to look for the exemplification of nobility of structure to those whose means place it within their power, how can we expect it from those to whom an increased expenditure might be a really important consideration.

Nobility of material lavishly used, ample space, solidity of structure, and the gift to the eye of something obviously designed rather to please than to pay, together with the effect that such departures from rigid utilitarianism produce instinctively on the spectator,—sources of effect lavishly indulged in in Italy at every period of her history, are only beginning to be appreciated amongst us in the present day.

At the times when architects, such as Inigo Jones, Wren, Gibbs, and Chambers, endeavored to maintain in this country the principles of grand Italian architecture, founded upon the universal practice during the best classical and medieval periods, marble, oak and stone were freely used. Cortices and loggias, colonnades and arcades, were not banished as profligate waste of ground and money. Carving, and the elaborate working out of ornamental features in true and just proportion, were considered to be essential to fine effects. Paintings were not to be hung as by accident against walls—here a Madonna, and there a set of bores drinking—but allotted places were provided for them in the vaults and on the walls of the principal apartments. Sculpture, too, found its niches, and when English talent failed to supply it, the services of foreigners, in spite of strong insular prejudices, were freely enlisted. And it was precisely when the public taste adopted a meaner class of building materials, a grudging spirit in the distribution of space, and a lower kind of internal decoration, that the art of design in this country, with some few honorable exceptions, fell to zero. From that pitch (if I may use the expression) of degradation and disintegration they are now happily rising into a concrete and perfect form, with a reaction the vigor of which is scarcely to be paralleled in the world's history. We are beginning to do better in each separate department of production; we are beginning to recognise that excellence in one must necessarily be combined with excellence in others; and we are beginning, in fact, to learn and practise the very system still lingering in the hearts and habits of the Italians. May we advance with them, and they with us—for it is one of the happiest conditions of all true art that, if it be worthily carried to perfection, its universality must breed honorable emulation, but never envy or jealousy.

THE LEICESTERSHIRE ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY.

THE general annual meeting of the members of this Society was held in the Town Library, Guildhall, Leicester, on the 27th of January.

The Rev. ROBERT BURNABY being called to the chair, requested Mr. G. C. BELLAIRS, the Financial Secretary, to lay before the meeting a statement of accounts for the past year, from which it appeared that there was, after all expenses were paid, a balance of about £26 in his hands.

Mr. T. NORTH then presented and read the report for the year 1861, which briefly adverted to one or two works carried out during the past year.

The work of restoration at St. Mary's Church, Leicester, has been further aided by the re-building—it can scarcely be said restoration, as there was little or nothing of the ancient work left to guide the architect in his designs—of St. Ann's Chapel, through the liberality of the Misses Noble. This venerable church is now an epitome of Gothic architecture, claiming and receiving the attention and the admiration of all who view the chasteness and extreme beauty of all its parts.

The excavations of St. Martin's, Leicester, have brought to light many antiquities of great interest. Several considerable portions of the foundations of ancient walls have been discovered, and upon removing the earth—in July last—on the north side of the church, close to the palisading dividing the church ground from the Townhall-lane, the workmen came to a rubble wall of considerable thickness, surmounted by a wrought stone platform, upon which stood the bases of two massive Doric columns, each about 2 feet in diameter. These columns in all probability formed a portion of a colonnade, which, judging from the size and the space intervening between them—about 10 feet—would be one of considerable length. The earth in the interior also contained numerous fragments of Roman pottery, and the bones of animals and birds. Two coins, the one of Nero and the other of Constantine, were likewise turned up; the truth of the tradition that a Roman temple stood upon the site of the present church being thus, it is presumed, unequivocally proved. Upon taking down the tower, several fragments of medieval coffins, corbels, and other pieces of carved stone, were met with in the later portions of it, the builders having apparently, without much respect for the remains of an earlier age, used all the available stone within their reach. Owing to an unfortunate dispute between the contractors and the London workmen, the works at this church have progressed but slowly; now, however, a more rapid progression is visible.

St. Andrew's Church, Leicester, is near to completion, and, as an experiment testing the adaptation (in the hands of Mr. Scott) of brick in the erection of an ecclesiastical edifice without internal piers, is worthy of the closest inspection and scrutiny.

The very beautiful schools and school-house at Belgrave, from the designs of Mr. Gillett, architect, Leicester, were opened early this year. As examples of Gothic buildings, admirably adapted for the purposes for which they were erected, the Committee draw attention to them with satisfaction and pleasure.

Many other works of church restoration in the county have been begun or completed during the year, among which may be named Stoughton Church, the tower of which has been taken down and rebuilt with great care through the liberality of a member of your Society. Other portions of the church wall, as need requires and circumstances permit, also receive careful attention. Considerable works have been carried on in the churches at Husbands Bosworth, Hathern, Osgathorpe, &c. &c., whilst at St. Margaret's, Leicester, the works of repairs and restoration have not been lost sight of.

The general meetings and excursions of the Society were held last year at Lutterworth,* when its church, and that of Misterton, were inspected. The Museum, which was rich in antiquarian objects and works of art, liberally sent from both rich and poor in the neighborhood, was most numerously attended.

In conclusion, the Committee congratulate the Society upon the addition of many new names to its list of subscribers during the past year, no fewer than 45 gentlemen having enrolled their names as members. They have, at the same time, to regret the loss of a few by death and withdrawal. This addition to the members, and consequently to the resources of the Society, has determined the Committee in carrying out a project which has many times been brought before them, namely, the publication of the past transactions of the Society. It is hoped that the first yearly part will be in the hands of members in the spring of 1862.

Upon moving the adoption of this report remarks were made upon several matters referred to in it; whilst fully admitting the beauty and utility of the new schools at Belgrave, several members thought the plan and design there carried out far too elaborate and costly for villagers generally, and Birstall school, erected a short time ago, was mentioned as a good type of a small village school where funds were small, and the attendance of children not likely to be very large.

The rebuilding of the tower of Stoughton Church was likewise commented on, and the manner in which the works have been carried on, strongly urged upon the attention of all interested or engaged in church restoration, as an example of most literal restoration. In fact, the work of the mason has been simply the

* See Vol. VII., page 823.

taking down the tower—which was in a dangerous state—and so rebuilding it as to place every stone again in its original place, only inserting new stone where the decayed state of the old rendered such a course absolutely necessary. The restoration is so perfect that a casual observer would not detect the recent work of the mason upon the materials.

Among the articles exhibited were: by Mr. John Hunt, a Roman coin found in the Belgrave gravel-pit, the inscription upon which was almost obliterated; it was apparently a first bronze of Constantine. Several other Roman coins, among which was one of Carausius, who reigned in Britain towards the close of the third century. A fibula, flint arrow heads, curiously formed flints, apparently worked into shape for sling-stones, all found between Great Dalby and Burrow-on-the-Hill. A hilted sword found in a drain near Bosworth, Leicestershire, bearing the date near the hilt, "Anno 1670."

Mr. G. C. NEALE exhibited an illuminated manuscript volume of prayers, &c., preceded by a calendar.

Mr. G. H. NEVINSON placed upon the table a Roman needle and bronze pin found in Leicester, and, on behalf of Mr. Pindar, exhibited a curious pack of playing cards, upon which were depicted the leading incidents connected with the murder of Sir Edmundbury Godfrey, in 1678; the famous plot said on the card to be "hatched at Rome!" The denomination of each card appeared at the corner, not colored, but heraldically lined. The Pope's head with triple crown supplied the knave.

Mr. H. GODDARD produced two Forms of Prayer set forth respectively in 1694 and 1745, for success to our arms by sea and land; a Roman bone spoon found in Causeway-lane, Leicester, together with a vase which is now in the Leicester Museum; also two enamels on copper, by Laudin, the one with the legend "S. Ignatius de Loiola," the other "S. Francisus Xaverius," being the work of the early part of the seventeenth century.

It was resolved that the general meeting in the ensuing summer be held at Bosworth.

THE CONSERVATION OF ANCIENT ARCHITECTURAL MONUMENTS AND REMAINS.

AT the ordinary general meeting of the Royal Institute of British Architects, held at the rooms, on Monday evening, Mr. M. DIGBY WYATT, V.P., in the chair, the discussion on Mr. G. G. Scott's paper, "On the Conservation of Ancient Architectural Monuments and Remains," was resumed.

Mr. G. GILBERT SCOTT remarked that he thought the meeting would believe him when he said that his paper contained about the whole he could say on the subject. However, as his paper had been published, and he was afraid its length had prevented some gentlemen from reading it in the architectural papers, he would call attention to the proposals and suggestions he had made respecting conservation, and particularly to the motion with which he concluded his paper. The general sentiment of his paper was the great damage constantly suffered by and inflicted upon the ancient remains of the architecture of this country by the several causes of time, neglect, and ruthless alteration and restoration. Though they could not resist the hand of time and could not arrest other causes of decay, yet, by attention to buildings, the decay might be, to some extent, arrested, and thus might be preserved remains which our country was at present so happily studded with. As to restoration and repairs of ancient buildings, he thought there should be some vigilant watch constantly kept upon them by persons whose line of study it was to look to them in order to their preservation. And though the whole could not be done by the Royal Institute of British Architects, yet he thought from the Institute should emanate certain communications, to be kept up by other societies throughout the kingdom, in order to a constant watch being kept on buildings, whether ancient ruins or buildings still in use and subject to decay, or to the more frequent course of restoration and ruthless conduct in the way of alteration. He thought any one who had visited the remains of this country could not have failed to notice the constant destruction and ruin going on. And, even if their operations were limited to that matter alone, it would be well for them to form themselves into a vigilance committee, and to communicate with kindred societies throughout the kingdom, for thereby they could do something to arrest that constant loss which, in course of time, would deprive us of those valuable monuments. But when they added to that the ruthless and ill-judged alterations going on in the restoration of our churches, he thought that such a committee was much more strongly called for. It would be found that it was not so difficult to contend with the ravages of time as with the wills of men in the ruthless and unnecessary alterations or removals of buildings. He therefore proposed they should form a standing committee of the Institute, which should not only watch and carefully observe what was going on, what was required, and keep their attention upon buildings which required observation, but also maintain a constant system of communication with other architectural and antiquarian societies throughout the kingdom, with the view of inducing them to form in their own districts kindred committees or societies, so that they might communicate with each other, and thereby extend their ramifications throughout the whole country. It seemed to him that, if they acted upon his suggestion, they could do a very great deal, though they might not be able to do all they wished. As regarded our churches, of course that was a matter of individual will, as he said before. Now, he could not suppose that all those persons who damaged our churches by making alterations did so from intention, but rather from not considering the subject properly. Now, one part of the duty of the committee he proposed should be appointed would, perhaps, be to consider the subject of the extent and limit of alterations, and to draw up a certain code of rules suggesting to societies throughout the kingdom what course the Committee of the Institute would like to be carried out in respect of buildings to which their attention might be directed. If therefore proposed, what he did at the close of his paper, that the Institute take the initiative in laying down, in conjunction with other architectural and antiquarian societies throughout the country, a code of rules for the treatment of buildings and restorations, and that, for that purpose, a standing committee be appointed to act with other societies.

Mr. G. E. STREET seconded Mr. Scott's motion with the greatest possible pleasure, because it appeared to him that the Committee proposed to be appointed was calculated to effect the greatest possible amount of good. Before he proceeded to say what he intended doing in support of Mr. Scott's views, he would briefly refer in opposition to views which dropped from two gentlemen, one of whom was present (Mr. Godwin), at the close of the reading of the paper. One of the views thrown out was that it would be well to memorialise Government to appoint a commission to inspect and draw up a report and catalogue respecting all ancient monuments under the care of the Government. Now, he thought that such a proposal was fraught with danger to the public and to art, and trusted that Mr. Scott's motion would take the place of such a proposition. They had only to cross the channel and see what had been done by Government Commissioners there. There had been a very skilled commission on the part of Frenchmen, and they made reports of extreme value, but the reports went two ways; they cut down buildings and recommended their restoration. And it was seen that the most grievous damage had been done to some of the buildings restored by the French Government. He thought he knew what would be the feeling of the profession if such a Government commission was appointed in this country. Were such a commission appointed, there would, no doubt, be a Government Secretary, a Government Engineer, and other Government officials, and he thought they ought not to put themselves under the tender mercies of such a body. Mr. Scott spoke of the proposed committee as a Vigilance Committee to have a veto on works that had not been properly carried out, or as they ought to have been done. But it was impossible to have such a veto; such a power could only be obtained by Act of Parliament; and even if they asked for such a power it was not likely it would be granted. He thought that, from time to time, the aid of those not immediately connected with the profession would be of great importance to the Committee proposed to be formed, and be of

great service to the profession in the saving of old buildings. One very large class of our buildings had guardians whose duty it was to take care of the edifices; all the churches in England had their legal guardians—bishops, archdeacons, and rural dean—whose peculiar province it was to see that our ancient ecclesiastical buildings were conserved in the most proper way; and he thought they ought to make suggestions to such guardians. It was the duty of the bishop of every diocese to look after the alterations proposed to be made in any church in his diocese; and the Bishop of Oxford set an example in this respect by insisting that all proposed alterations of churches in his diocese must be submitted to him, so that he might see whether anything of a destructive character or injurious to the church was contemplated. (He Mr. Street) thought it would be quite within the power of such a Committee as that which Mr. Scott proposed to make some movement with the bishops, archdeacons, and rural deans, and even the two Houses of Convocation, besides those officers of the church who were bound to attend to certain duties in reference to the fabric of the church. And there was a very large number of societies throughout the kingdom whose assistance would be of great advantage. Mr. Parker, of Oxford, had published an Ecclesiastical Topographical Dictionary of certain districts of the country, and he (Mr. Street) thought that, with an active machinery in full operation throughout the country, they might secure an ecclesiastical topography of England. What was formerly the Camden Society of Cambridge, now the Ecclesiological Society, had large stores of that kind. These were some of the ways in which the new organisation proposed might be made to work effectually. But no organisation or information they could obtain would do permanent good without a very careful education of architects, and that was one of Mr. Scott's strong points in his lecture, in which he had to say some things as unpleasant as they were true. Unfortunately, Mr. Scott had to allow that much as was the injury our buildings received from age and weather, they also suffered from bad treatment. One saw many churches restored by men who had gone to work in a most reckless manner, and the loss thereby occasioned could not be replaced. Architects ought to take care of old buildings, and he thought the committee proposed by Mr. Scott would be productive of the greatest possible advantage. As to the mode of dealing with old buildings, he thought they must all agree with what Mr. Scott had said in his paper. So long as they could keep an old building on its legs by buttressing and other means, so much the better; but then the next best thing was to get as good a copy as possible of the old one. There were some details in the restoration of ancient buildings which, if attended to, would make more difficult the failures they frequently met with. He thought that in all cases of church restoration there should be established in the church itself a sort of small museum for the reception of fragments of glass, sculpture, and so on. Then, as to the taking possession of curious fragments found in buildings, he always looked on a collector as the most wicked of men—(A laugh). The restoration of old work always required a most careful study of old work in the surrounding neighbourhood; and when an architect found a similarity between one point in a building and another point of the same kind in another building, he ought to take a note of it. One of the reasons for the existence of inferior restorations was that young architects had not devoted sufficient study to the ancient architecture of their own country. He advised young students to go about the country studying and sketching old buildings, a custom which he was afraid was not more practised now than it was some years ago.

Mr. C. F. HAYWARD was sure they all considered that the proposed committee would be a most valuable one. He then proceeded to remark that during the vacation in autumn, instead of going to the United States, he went to Dublin, where he visited the cathedral, which he found undergoing the process of restoration. He inquired very anxiously who had charge of the work, but he could not find out that anybody whatever had charge of the work but the builder. He found a person who called himself the clerk of the works, and he believed he spoke to the builder himself, and made every possible inquiry to ascertain under whose superintendence the work was going on, but was unsuccessful. He understood that one gentleman in Dublin was at the sole expense of this restoration, but it depended on the way in which such a restoration was carried out, whether, a century hence, architects would be thankful to Mr. Guinness for spending £40,000 or £50,000, or even a larger sum of money. He thought that somebody should have control over such a restoration, and it grieved him that no name of authority was forthcoming. He considered one portion of Mr. Scott's paper peculiarly valuable, and that was the portion where he gave suggestions for practice under various circumstances.

Mr. GILES said that such a court as Mr. Scott proposed to establish would be of infinite benefit, and he hoped and trusted it would be established. A central court of appeal would be of great advantage to country societies, in proof of which he mentioned several facts which had come under his own knowledge.

Mr. G. GODWIN was rather sorry that Mr. Street, in supporting Mr. Scott's motion, seemed to be abandoning any idea of interesting the Government in the object they had in view, because he felt himself that the desired good would not be done without something of that kind being done. He was sure that very great advantage would follow the establishment of the proposed committee, but feared that all the good would not be done by it that could be effected by an appeal to the Government. In 1840 endeavors were made by Mr. Britton and others for the establishment of some such body as that now proposed. In 1840 Mr. Britton addressed a letter to Mr. Joseph Hume on the subject, and ultimately that led Mr. Hume to move in the House of Commons for the appointment of a committee of inquiry, and that committee was appointed, sat and took evidence, published a considerable blue book, but nothing further came of it. Then, again, in 1853, Mr. Wyse was induced to take steps in the matter, and he moved for a commission for the conservation of national monuments, but the motion then failed; but every one saw its necessity, and that necessity had not been lessened by local efforts being made, and therefore it seemed to him that this was the time when such a question should be brought before the Government; reporters did not now, as they formerly did, close their books when art was mentioned, and especially architecture. A different policy was now abroad, and he hoped that those who should compose the proposed committee would be led to suggest to the Office of Works—as Mr. Donaldson proposed after the reading of Mr. Scott's paper—that they should have at least made out a catalogue of the buildings under their charge. He commended most seriously to the committee to be appointed the propriety of moving the Government on the subject.

Mr. SCOTT thought both the danger and the benefit of such a proposal ought to be watched and well weighed by the proposed committee, and it would form a fair subject for consideration.

Mr. J. W. PAPWORTH wished to ask if the action of the Committee was to be confined to England, and, if not, how far it was to extend.

Mr. SCOTT thought their business was to begin at home, to say the least. At the same time, if any grand case came under their notice—for instance, in France, threatening destruction by restoration, he thought it would be a proper subject for consideration, so that the Committee might send a memorial to the proper authorities, offering suggestions on the subject. As a general principle they should look at home objects.

Mr. J. W. PAPWORTH wished to know if the proposed committee was to be appointed for life, or for what length of time.

Mr. HAYTER LEWIS, Hon. Sec., said if the Committee was to be appointed by the Council, as was intended, it would go on from year to year, or until it had accomplished the object for which it was appointed.

The CHAIRMAN—If the Council had the power to appoint a committee, they had also the power to change the members from time to time.

Mr. J. W. PAPWORTH asked what expenses were to be allowed to the committee.

The CHAIRMAN—It would be for the Council to decide upon that, which they had authority to do by the rules of the Institute.

Mr. J. W. PAPWORTH was opposed to the establishment of the proposed court of criticism; as a court of appeal such a committee as that proposed to be appointed would be highly objectionable. Would not such a committee, if it acted, be exposed to actions for libel?

Some verbal alterations were then made in the motion proposed by Mr. Scott. A conversation followed, in the course of which Mr. SCOTT observed that the matter of expenses would be under the control of the Council, who would not allow the committee to go into any unreasonable expenditure. As to the proposed committee forming themselves into a court of appeal he did not mean that.

Mr. J. W. PAPWORTH did not impute that to Mr. Scott.

Mr. SCOTT—It was also never intended by him that the committee should do anything

that would render them liable to an action for libel. He thought that the committee, as he proposed its establishment, would act under a perfect safe-guard.

Mr. J. W. PAPWORTH moved as an amendment that the word "standing," as applied to the proposed committee in the motion, be omitted.

Mr. JENNINGS seconded the amendment. He thought it was an important matter to have a committee appointed to consider the question of the repair, but not the restoration, of buildings. When repair became necessary, restoration might become requisite, but not until then; he should not advocate the committee to interfere on the ground of restoration, but he thought the committee could do an immense deal of good on the general subject of restoration when repairs were going forward. The clergy were doing a great deal in the way of restoring churches, and it would be well for the Institute to communicate with them. Another matter which the proposed committee should do would be to communicate with the owners of ancient buildings. He was of opinion that when such a committee was appointed, the names of the committee ought to be submitted to the members of the Institute at large, and also thought that it would be well to have a more permanent Council than they had at present. The present system did not work well, and he thought it would be judicious to have it altered. He should prefer a committee of the Council to look after this matter, and that gave rise to his objection to the use of the word "standing" in reference to the proposed committee. He was of opinion that the better plan would be for the Council to appoint a committee every year, and if the committee did their business properly, the Council would, no doubt, appoint the same men again. The proposed committee should be appointed from year to year, instead of being a "standing" committee.

After some further conversation the word "standing" was struck out of the motion, and Mr. Papworth's amendment was, of course, withdrawn.

Mr. J. W. PAPWORTH then moved, as another amendment, that the word "rules" in the motion be omitted.

Mr. G. GODWIN was opposed to giving to the proposed committee, of whose names they knew nothing, so much power as to establish rules.

Mr. ROBERT KERR was wishful that the Institute should step into all paths of usefulness, but thought they had no authority to appoint the proposed committee with such powers as seemed to be involved in the discussion. He should be very jealous of the action of the proposed committee in its legislative character. He thought any inquiries and suggestions made by such a committee would be received with the greatest respect by the members of the Institute; but if it was to be an inquisitorial committee, to investigate the works of architects by which they made their living, the result would be that the committee would be stigmatised for going beyond the province marked out for it by the Institute.

The CHAIRMAN thought the Institute's action would be most usefully employed in affiliating themselves with the archaeological societies. If they could get the Archaeological Institute and the Archaeological Association to know that the Institute was wishful to assist them, the results might be very beneficial; and, probably, by associating the action of the Institute with one or both of those bodies, more good would be effected than by acting separately.

Mr. SCOTT said he should be sorry, because they saw difficulties, or imagined ones, that this important subject should fall to the ground, and he should be sorry that a work of such importance should arise or originate with any other body than their own. He thought they ought to take the initiative, and not, by letting the matter drop, let another society take it up where they left it. He thought there could be no objection to the suggestions and instructions of the proposed committee being submitted to the Institute before taking effect.

A conversation followed, in the course of which the word "rules" was struck out of the motion, and, consequently, Mr. Papworth's amendment was withdrawn.

Mr. J. W. PAPWORTH then proposed another amendment, to the effect—"That a Committee be appointed to draw up a series of practical regulations for the treatment of buildings requiring reparation, and that the Committee report to a general meeting of the Institute their recommendations for confirmation."

The amendment was seconded, but, on being put to the vote, negatived.

Mr. ROBERT KERR then moved, as an amendment to the motion—"That the Council be requested to appoint a committee to investigate the subject of conserving ancient British buildings, and to report to the Institute, from time to time, any measures which the said committee may deem desirable."

Mr. PORTER seconded the amendment.

On the vote being taken, there were—for the amendment, 7; against it, 9. The amendment was, consequently, lost.

The CHAIRMAN then put to the meeting the motion of Mr. Scott, which, after various alterations had been made in it, stood as follows:—"That the Council be requested to nominate a committee to draw up a series of practical suggestions for the treatment of buildings requiring reparation, and to put themselves into communication with other architectural and antiquarian societies, with a view to obtaining their co-operation in considering such measures as their united wisdom may suggest for the promotion of the faithful and authentic conservation of ancient monuments and remains, and to report on the same to this Institute."

The motion was carried, and the meeting separated.

ARCHITECTURAL ASSOCIATION.

AN ordinary general meeting of this Association was held at the Rooms, 9, Conduit-street, Regent-street, on Friday evening, Mr. A. W. BLOMFIELD, M.A., President, in the chair.

Mr. ARTHUR SMITH, honorary secretary, having read the minutes of the last meeting, stated that a number of the members of the Association visited a portion of the Underground Metropolitan Railway on the previous Saturday afternoon, and were highly gratified with the excursion.

New Members.—The following gentlemen, having been balloted for, were duly elected members of the Association:—Mr. J. Johnson, Cliff-street, New North-road; and Mr. North, Radnor-street, Chelsea.

The Induration of Stone.—Mr. A. H. CHURCH, chemist, then read a paper on the Induration and Preservation of Stone, which we shall give hereafter.

The CHAIRMAN said he should like to be informed whether there was any peculiar action in the air at the sea side which was detrimental to freestone or soft stone?

Mr. CHURCH said a very curious discovery had recently been made; it would not be supposed so, but it was the fact, that the sea spray was carried two or three miles inland; there was no place where the dust had not fragments of sea spray in it, and it was full of carbonate of sodium. And several other substances had been found in towns far removed from the sea and residue of the sea spray. No doubt the stone referred to would, by such means, be injuriously acted upon.

Mr. TROTMAN having been called upon by the Chairman, said he was interested in one of the processes which had been mentioned by Mr. Church in his paper, he referred to the formation of the silicate of alumina, which was produced by the application of silicate of potash and aluminate of potash. The late Prince Consort published a translation of a work by Messrs. Fuchs and Kuhlmann, which contained a great deal about stereo-chromy. A perusal of that book led the firm he represented to make lengthened investigations and experiments, and eventually to the adoption by them of the process called the silicate of alumina. The speaker then proceeded to describe the process, which he thought would be found of great use in the preservation of stone. Silica was the principal material in the process, and that in the form of silicate of potash; but, lest silicate of soda and potash should be deemed synonymous, he would say that in this process they were by no means identical, the silicate of soda producing results both unsatisfactory and valueless. The second material was the aluminate of potash. Of this, in the form of an aqueous solution, we find it stated by all chemical authorities to the present time that it precipitates an hydrate of alumina, difficultly soluble in excess of the precipitant; and thus we found it behave after forty-eight hours, precipitating most bulky in heavy solutions, and as much so in proportion in light specific gravities. He need not say how valueless was such a solution commercially, nor tell the difficulties attending the discovery of a simple remedy, so simple as the determination of the particular specific gravity at which it would not precipitate. The behaviour of the aluminate with water is remarkable, seeing that one atom of alumina held in perfect

solution by say three atoms of water should be precipitated by the addition of a fourth, or by the withdrawal of one of the three atoms. The aluminate used is prepared from a fused compound of alumina and potash, which product, being highly deliquescent, is easily soluble in water, and so nearly neutral as to contain in its best form of manufacture but 2 per cent. of free potash. In the combination of silicate of potash and this aluminate of potash consisted the process, the consideration of which afforded some most interesting details. When silicate of potash, specific gravity 1.250, and aluminate of potash, specific gravity 1.200, are mixed together, an instantaneous decomposition takes place, and the result is a solid mass, consisting of silicate of alumina and some free potash. This hardened with extraordinary rapidity, and was a most beautiful example of the great affinity of silica for alumina. But take a solution of a lighter specific gravity, and it was found that decomposition did not instantaneously take place. On the contrary, the liquidity of the two solutions in combination was retained for a time, only, however, proportioned to the quantity of water with which it was diluted. Thus a specific gravity of 1.150 would last as a solution ten hours, while at 1.200 it solidified immediately. The cause of this arrest of the decomposition—if indeed, it was arrested—and the peculiar part the water played in this interchange of elements, would yield a field of interesting inquiry. The results were, firstly, the time so necessary for manipulation is given in the use of these materials, which in themselves, secure an insoluble product by their mutual decomposition. Secondly, that the agent and re-agent being mixed in one solution, there can be no fear of the one or the other being in excess or unneutralised, as in the use of acid or second solutions. Thirdly, the product resulting from this combination of silicate of potash and alumina was insoluble in dilute sulphuric and hydrochloric acids. And, lastly, if Anston, Bath, and Caen stone, or chalk were pounded, this product would recombine them, thus showing that its chemical affinities are in favor of the material with which it was proposed to impregnate the stone. Finally, in the works of Fuchs and the brochures of Kuhlmann the foreshadowing of this process may be seen; and in the Report of the Commission appointed to investigate the causes of the decay of the Houses of Parliament, there are mentioned, though not in conjunction, the very materials proposed to be used by this process. He need hardly say that they had had to go over the ground again and again, finding difficulties which had to be overcome, until they obtained the proper proportions of the ingredients. But now, having obtained the proper proportions, they could get a hard mass like gelatine, and it was a very important material for painters, especially those employed in stereo-chromy. The specific gravity being light, its entrance into the stone was very free, and its combining qualities very great.

Mr. T. ROGER SMITH said he thought all would agree with him that they were much obliged to Mr. Church for his paper. As regarded the actual bearings of the question of the induration of stone in their professional practice, it struck him there were just two circumstances to be considered. The first was the case of buildings in a state of decay coming into their hands, and which were to be made the most of, and the second was the case of erecting new buildings in a bad atmosphere, with the desire of doing the best for them. As to buildings in a state of decay, it would be a most important thing for architects to use such a process as was clearly proved to be of advantage. But he thought they must hold that, as far as they knew, there was nothing before them that was so decidedly proved, or had the unanimous consent of learned men as being successful, to lead them to have the utmost confidence in it. Still there were processes that deserved confidence, and, no doubt, some of them, as they knew them more, would obtain confidence. As to the possibility of baking stone to dry out the watery particles before any chemical agents were used, sometimes the heat of summer would do that. With regard to new buildings, it seemed to him the whole of their safety as architects, especially in an atmosphere like that of London, lay in a scrupulous and careful use of good material, and that was urged upon them in the report of the Commissioners appointed on the stone of the Houses of Parliament. They ought to make a very careful selection of the materials to be used. The number of materials that would stand in the London atmosphere was not very great, but some had stood better than others, such as Portland stone, some Bath stone, &c. In his opinion position would sometimes influence the decay of stone. He should be extremely glad if Mr. Church could refer them to some good durable building stones.

Mr. CHURCH said he was not inclined to speak with any degree of confidence as to the durability of building stones, but they knew Portland stone was the best that had been used in London buildings, and no fault could be found with some magnesian or dolomite stone. He was at the present time engaged in examining different kinds of stones which could be used in London, and he intended publishing a short account of their behaviour under chemical tests.

Mr. ROGER SMITH thought a mistake had been committed in building so much in lime and Bath stone. Sandstone could be easily procured from Yorkshire and Derbyshire for London use. He had found Darley stone exceedingly valuable.

The CHAIRMAN said one of the causes of the frequent use of Bath stone was its cheapness, but Mr. Smith said they could get other stones as cheap. He should like to know if Mr. Church had examined the stone of Ketton, in Northamptonshire.

Mr. CHURCH said he had not.

The CHAIRMAN remarked that St. Dunstan's was built of it, and it seemed to stand London weather very well.

BRITISH ARCHAEOLOGICAL ASSOCIATION.

AT the meeting on the 22nd ult., T. J. PESTIGREW, V.P., in the chair, T. H. Le Keux, Esq., was elected an Associate. Mr. MOORE forwarded particulars relating to the discovery of a Roman villa in a field called Chessell's West Coker, Somersetshire. In reference to the discovery of a leaden coffin at Worcester Cathedral, announced at the previous meeting, Mr. CUNING mentioned other instances in which they had been found of human form. These were of James IV. of Scotland, buried at the Monastery of Sheen, in 1513; of Mary, Countess of Arundel, in the chapel formerly belonging to the College of the Holy Trinity, at Arundel, in 1557; of Henry Prince of Wales, in a vault on the north side of Henry VII.'s Chapel at Westminster, in 1612; and of Thomas Sutton, the founder of the Charterhouse, who died in 1611. This example is very singular, for on its upper part is a mask with a square Egyptian beard, as seen on the mummy-cases, having an Osirian representation.

The CHAIRMAN stated that his attention had been called by the local surveyor of the Board of Health, at Bow, to the discovery of a portion of a sepulchral slab of Purbeck marble, on digging a sewer on the site of the ancient Abbey of West Ham. He and Mr. Roberts had visited the spot and found it to be 26 inches in length, and 23 inches in breadth, giving a representation of the lower part of a Calvary cross, with trefoils and quatrefoils at the sides. The character of the work was neither pure nor good, and belonged to the commencement of the fourteenth century.

The CHAIRMAN also reported that inquiry had been made in regard to the preservation of the house visited during the Congress in 1849, known as God's Providence House, having carved in wood on its front "God's Providence is Mine Inheritance." This had been threatened with destruction, and it was intended to have had a brick front instead of the present. But by the laudable exertions of the Chester Archaeological Society this had been averted. The house is now almost down, all the back part has been taken away bodily, but the front remains. All the old oak is to be used again, and the front will be simply thrown up so as to increase the height of the row and the rooms above.

Mr. PLANCHÉ read a paper "On a Remarkable Tomb at Abington, County of Salop," which was illustrated by drawings by Mr. Hillary Davies, of Shrewsbury.

THE CASE OF ST. THOMAS'S HOSPITAL.—Vice Chancellor Wood has granted an injunction restraining the Charing-cross Railway Company until the expiration of one year from the 26th July, 1861, when the arbitration was appointed. The Company considered they were entitled to one year from when they gave the hospital notice to take the portion they then intended to take, and all they thought they were obliged to take. The case was subsequently brought before the Lord Chancellor on appeal, and, on the suggestion of that judge, it has been arranged that the Company shall be allowed to proceed with the works on the piece of ground required.

INSTITUTION OF ENGINEERS IN SCOTLAND.

At the third meeting of the session, Professor W. J. MACQUEEN RANKINE, Vice-President, in the chair, the members resumed the discussion on

VENEER-CUTTING MACHINERY.*

Mr. E. HUNT said it had been found extremely difficult to obtain reliable information permitting a fair comparison to be drawn between the two veneer-cutting machines—the German one with the reciprocating saw, and the circular-saw machine. The speed of the German machine was 300 revolutions of the crank-shaft, or 300 double strokes per minute, and the rate of feed, as tested by Mr. More and himself, about 15 inches per minute. The particulars obtained respecting a circular-saw machine were as follows:—Diameter, 10 feet; speed, 100 revolutions per minute; rate of feed, $\frac{3}{4}$ inches per revolution, or 64 feet per minute—the width cut in this instance being 7 inches. It was claimed for the German machine that it was better than the other for extra widths. It could cut up to a width of 31 inches; but, taking a width of 14 inches as an ordinary one, its actual speed of sawing was 1 foot to nearly 3 feet cut by the circular saw. The charges for cutting were the same in both cases; but being charged upon the square feet of veneer produced, there was an increased gain to the sawyer, as well as to the veneer merchant, for every extra veneer taken out of the inch. The evidence as to the number of veneers obtained per inch was very conflicting, which probably arose from the fact that it varied very largely with the kind and quality of wood. On the whole, the German machine appeared to have the advantage in this respect; in other words, it would give two or three more veneers per inch of a given thickness. As regarded the condition of the veneers produced, several inquiries had been made—from wood merchants who got the wood cut, and from cabinet makers who purchased it when cut, and used it—and the replies were generally in favor of the circular-saw machine. The reciprocating action of the straight saw appeared to roughen the surface, settling different portions of the fibres in opposite directions, and generally obscuring the pattern or grain of the wood. It was even said that this obscuration remained, notwithstanding the polishing down; but this savoured a little of prejudice. The same action was also said to loosen any of the fibres that chanced to lie across, in such a way as to permit the glue to come through and spoil the appearance.

Mr. J. RUSSELL said that at the last meeting he made some remarks from memory regarding a veneer-cutting machine, and since then he had made more particular inquiry, and was now in a position to give the data more correctly. The speed of a 15-feet circular veneer-saw in Leith mill he had given at 300 turns a minute, but he found that was 100 turns too much. The speed of two 13-feet saws was 200 revolutions per minute. There was one 17 feet in diameter, which made 100 revolutions. With a log 18 inches deep, the speed at which it cut was from 4 to 5 feet per minute, depending much, however, upon the kind of wood. With the 17-feet saw the wood travelled forward about half an inch every revolution. He had also found that about the year 1825 veneer cutting was introduced into Scotland by Mr. Burstall, from London, who erected a saw in Leith saw-mills. Mr. Malcolm Muir, then in Greenock, also got up a veneer-cutting saw about the same time, and what each gentleman was doing was unknown to the other. They ultimately became connected in developing the planing machine. He had also found that the pitch of the teeth in the first veneer-saws was very much finer than now, the pitch at present being something like half an inch, whereas, at the time he referred to, it was much finer. Mr. William Norman, by simply removing some 1,000 teeth out of one saw, thereby increasing the pitch, was enabled to do a very much larger amount of work. At last meeting he believed a remark was made by Mr. Glen to the effect, that a circular veneer-saw could not cut anything but veneers; that is to say, it could not cut boards a quarter of an inch thick. Now, he found that a circular-saw, 3 feet in diameter, got up in the same way as a veneer-saw, with a disc plate, and the edge of the saw reduced to the wire gauge 22, had cut 5,000 lineal feet, per day of 10 hours, of fir $\frac{1}{2}$ inch thick, used for orange boxes, and sent to Liverpool by Messrs. Baird and Brown, a fact which showed that the circular veneer-saw could cut wood of that thickness. With regard to cost, he had found that the 17-feet saw cost something like £200. A peculiarity in the cutting of the wood at the Leith saw-mills was, that the wood travelled above the centre of the saw, while in the machine fitted up by Mr. Muir the wood travelled below.

A paper was then read by Mr. JOHN NORMAN,

ON WOOD-PLANING MACHINERY.

Since its first introduction into this country the flooring machine has undergone various changes in design. What we may call the original flooring machine was the invention of Mr. Malcolm Muir, of Glasgow, who took out a patent for it in the year 1827. In this machine the wood being planed was led through by hooks attached to an endless chain passing over pulleys at each end of the machine, and circular saws were used for grooving and feathering the edges of the board.

The machines used before Mr. Muir's machine was introduced were very imperfect, comprising in each case only a revolving scutcher or adzing knife, the board afterwards being put on another machine for the purpose of getting the edges dressed. In these machines the board was led through by rollers driven by spur gearing, and the scutcher was placed on the top in a movable frame, and held down by weighted levers.

In 1838, Mr. William Norman, of Glasgow, applied five pairs of rollers to one of Mr. Muir's machines, for which patents for Britain were obtained, thereby doing away with the pitch chain and hooks, as great inconvenience and loss was found to exist with their use in planing thin boards, from the hooks tearing them up. Mr. Norman afterwards applied cutters for grooving, retaining the circular saws for feathering the edges of the boards. The machine upon which these alterations were made is still at work in Messrs. Baird and Brown's saw-mills, Port Dundas.

In a flooring machine, embodying all the most recent improvements as constructed by Messrs. Norman and Co., and erected by them at Alloa, there are five pairs of rollers, 12 inches in diameter and 12 inches long, driven by bevil gearing. The upper rollers are held down by springs, similar to coach springs, and are lifted to suit different thicknesses of wood, varying from $\frac{1}{2}$ -inch to 4 inches, by means of screws turned by hand wheels. Each screw works in a nut formed on a buckle or strap passing round the under side of the upper roller and bearing in a recess cast in the standards. The bushes of the under rollers are put in from the under side, and are held in position by malleable iron plates, and are

adjusted by screws. This arrangement makes the under rollers very easy of access, all that is required to get out the rollers being the removal of the malleable iron plates. The plane bed in this machine is of the usual form, having three irons, which have in plan an angle of 45 deg. In some machines, however, the bed is east separately and the plane irons are placed in a movable box. The cutter heads are formed with three short arms, each being furnished with cutting irons for grooving and feathering the edges of the board. The cutter heads are adjusted to the required breadth and thickness of flooring by screws. The thickening scutchers consist of a pair of revolving cutters or knives, fastened to two sets of malleable iron arms, and adjusted by thumb screws. The scutcher is adjusted for different thicknesses of wood by screws connected by a shaft passing across the machine, and with bevil wheels worked by a hand wheel.

The main driving shaft is fitted with pulleys for driving the feeding rollers at two speeds, 30 and 46 feet per minute, and also with a pulley for driving the cross shaft at the end of the machine, on which last are the pulleys for driving the grooving cutters and thickening scutcher. The grooving cutters make 3,000 revolutions per minute, and the thickening scutcher 2,500 revolutions per minute. This machine has been in operation for the last twelve months, giving the greatest satisfaction, being able to turn out 1,300 yards of flooring per day.

A drawing was shown of a machine erected at Mr. Fauld's works, Glasgow. This machine was originally constructed for planing wood, but was afterwards altered so as to be able to plane flooring. The additions made were a pair of cutter heads for grooving and feathering, and a thickening scutcher, which will account for the apparent want of arrangement of the parts. The object in view in bringing forward this machine was to show that, under ordinary circumstances, two pairs of rollers can be made sufficient to lead through the wood to be operated on. The original machine consisted of two pairs of rollers, 20 inches in diameter and 13 inches long, the upper rollers being held down by springs similar to those already described, and driven by bevil gearing. The plane bed is in the middle of the machine, and over it there are placed three pressing rollers, kept down on the upper side of the board by springs. This machine will plane up to 4 inches thick, and at the rate of 36 feet per minute.

DERBYSHIRE IRON.

At a dinner celebration of Messrs. Eastwood and Sons, on the occasion of the erection of large rolling mills, at Derby, Mr. Hedley, Government Inspector of the district, gave some interesting statistics. He said upwards of 4,000,000 tons of iron are made annually, over 20,000,000 tons of coal being consumed in the manufacture of the same. Iron making in the Midland Counties was confined to Derbyshire, where 130,000 tons are annually made, consuming 700,000 tons of coal; fifty years ago the make was only 12,300 tons annually. The iron of Derbyshire is used for railway and other purposes where body and tenacity are required; and this iron will bear comparison in quality with iron made of the materials of any other coal field. Derbyshire iron has been subjected to many severe tests, two or three of which he mentioned. Some time ago many makes of pig iron were tested at Woolwich Dockyard, when the iron of Messrs. Whitehouse and Sons, of the West Hallam Works, Derbyshire, bore the greatest breaking strain. Last month, an armour plate $\frac{1}{2}$ inches thick, manufactured by J. Brown and Co., of the Atlas Steel and Spring Works, Sheffield, of a mixture of cold and hot blast iron, made by Messrs. Fowler and Co., of the Sheepbridge Works, near Chesterfield, was tested at Portsmouth, and stood a test unsurpassed by any armour plate yet submitted to a test. The Butterley Company have long had a character for superior make of bars, plates, sheets, &c., and they are now rolling the largest masses of iron into girders, &c., of any firm, for girders for our large war steamers. Mr. Barrow, of Staveley, makes several hundred tons of castings weekly; from the largest pipes, girders, and columns, down to the smallest. To show the energy of this gentleman, and the extensive mechanical appliances at his command, he has recently completed an order for 4,000 tons of girders and columns, &c., for the Great Exhibition building. The patterns were made, the column ends turned in the lathe, and the castings completed in three months, without interfering with the ordinary work. He has now in hand an order for two miles of railings for the galleries of the same building. Messrs. Oakes, of Alfreton Ironworks, have for a long time maintained a character for superior material and workmanship in their extensive casting business, which embraces castings of every description. All these gentlemen work Derbyshire iron, and there is plenty of material on the ground to work it for 50 years to come. The mining operations of Derbyshire afford employment to above 5,000 hands, in producing materials for iron making, and about 18,000 hands are employed in producing all the coals and ironstone of the county.

MEMORIAL TO ROBERT STEPHENSON IN WESTMINSTER ABBEY.—During the process of cleaning which the Abbey has undergone for the last month a brass has been let into the floor of the nave, about midway between the western door and the choir screen, to the memory of the late Robert Stephenson, who was buried side by side with Telford in that spot. The memorial is of Cornish granite, and weighs 2 tons 2 cwt. The brass is a figure of Stephenson, who is represented in plain clothes, his arms folded across his breast. The inscription round the figure is—"Sacred to the memory of Robert Stephenson, M.P., D.C.L., F.R.S., &c., late President of the Institution of Civil Engineers, who died 12th October, A.D. 1859, aged 56 years." The brass is by Messrs. Hardman, of Birmingham.

ACCIDENT AT THE EXHIBITION BUILDING.—On Saturday morning, whilst a smith, named Richard Gale, was driving in the rivets of one of the girders of the Exhibition building with a sledge-hammer, William Powell, his assistant, suddenly raised himself to an upright position, and received the full force of the blow intended for the metal on his head. The unfortunate man's death was instantaneous, his skull being shattered to atoms.

DUBLIN.—Alderman Drummond, has offered to give £10,000 towards the erection and endowment of an institution for the training and educating of soldiers' children, if the Government give a similar sum, and the public raise by subscription a third £10,000. Alderman Drummond proposes to make it a counterpart, in working and design, of the institution for educating soldiers' boys in Phoenix-park.

* See page 51 ante.

CHURCH BUILDING.

Kington Church.—This fine early church, which withstood the rude use to which it was put by the Parliamentarians as a stable in the seventeenth century, has just been reopened, after having undergone extensive restoration and enlargement since 1857. The reseating and restoration of the chancel and private chapel was carried out by Lord Daere; the reseating of the nave and south aisle followed, through the exertions of the Rev. Frederick Sullivan, the vicar, with extensive works in repairs, and the restoration of the internal walls and stonework, which was very much mutilated, and, in parts, unsafe. The old screens, with the chancel seats, are restored, and every point of interest has been carefully preserved. The walls were formerly richly decorated with paintings; the Seven Acts of Mercy, which were found, unhappily could not be preserved; but some earlier work at the east end of the chancel was discovered, and remains in an almost perfect state. The Parliamentary soldiers defaced with thick coats of whitewash all the colored decorations; and over this, under the soffits of the arches, they stencilled in oil color the different characters of their playing cards, and, even now, faint outlines can be traced of aces, clubs, hearts, and spades, which have so sunk into the walls as to defy removal without waster destruction. The Commandments, as originally directed by the Canon of Elizabeth, were found over the chancel arch, and a few of the original encaustic tiles remained; the latter are relaid, and the patterns preserved in the new tiles. The remains of a very singular supposed cist, containing bones and wood, was found in the churchyard, formed of embossed tiles, filled in with color of good design, somewhat resembling majolica ware. The wants of the parish requiring an increase of accommodation, a new aisle on the north side of the church has been built. Much remains yet to be done to the walling; the whole of the external masonry is in a sad state of decay. The chancel and nave are covered with flat modern roofs, plastered underneath, whilst the south aisle roof, which is a good specimen of Perpendicular work, has undergone as much repair as it will bear. In order to obtain light over the accumulation of the earth and the rising ground behind, and to secure pitch enough for the tile roof, it was necessary to carry up two gables in the north wall, which are each filled with windows of three lights, and two smaller windows between; a two-light window fills the east wall. The roof of this aisle is of fir; it is enriched with carving, stained. The pulpit and prayer-desk are of oak. A new font has been added, and the tower arch enclosed by a screen. The work has been carried out under the direction of Mr. Joseph Clarke, diocesan architect, by Messrs. Warren and Son, contractors, of Ilitchin.

Crayford Church, Kent, was re-opened on the first of the new year, after an extensive restoration and reseating, also under the direction of Mr. Joseph Clarke. This church was before restored by Sir Cloudestley Schovel, the famous Admiral—a great fire happening in his time, doing considerable damage, and leaving traces which were found in prosecuting the present works. Originally a Norman church existed on the site, with conventual and other ecclesiastical buildings around it, the foundations of which were found and remain under the present floors. It was then, no doubt, a church of the usual arrangement, with a nave and aisles; but in later times these disappeared, and the space between the outer walls, north and south, was equally divided, and a third-Pointed arcade built, thus forming two naves. The original third-Pointed chancel—of which portions remain—was left, with the singular and almost unique arrangement (in England, at least) of a central row of shafts, with the last half-arch of the arcade dying or butting on to the wall over a low depressed chancel arch. Considerable traces of the original work remain, and these have all been carefully preserved. Very few traces of color were found; but some curious models of small shafts, with bases and caps, in gypsum or a coarse kind of plaster; of early third-Pointed work, turned on a lathe, were found built in in the centre of a third-Pointed wall. They appear to have been used as a guide to the workmen in cutting the original masonry, as is supposed, of the sedilia. The greater part of the internal masonry has been restored, and the whole church, including the Draper and south chapels, reseated with substantial and solid benches. The floors have been properly levelled. All the vaults, of which there are many, are carefully ventilated by a series of pipes carried through the walls, and the whole surface covered with concrete. The masonry of the east window is new, and filled with stained glass by Ward and Hughes. Another window in the north aisle is filled with glass by Clayton and Bell. A new font has been presented, and nothing has been spared to make the church perfect. Price and Co. were employed for the heating; and a new clock, by Benson, has been added. The gas-fittings are by Skidmore, carried out in a novel and efficient manner. The cost of the works will amount to £1,500; they have been executed by Miles and Melton, of Dartford. The exterior of the church, with the roofs of the double naves, are left for future restoration.

Huntingdon.—*All Saints*, a very fair specimen of the later sixteenth century churches, is undergoing extensive repairs. The old roofs of both nave and chancel have been entirely removed, and replaced with new; the south aisle has been pulled down and rebuilt, and a new organ chamber on the north side of the chancel added. The old galleries have been all pulled down and cleared away. Already more than £2,000 have been expended, and the whole of the seating, &c., has yet to be done before the works will be completed. The work has been carried out under the superintendence of Mr. G. G. Scott. —*St. Mary's*, which is also a church of about the same period, and which possesses a very good tower, is also undergoing restoration. The whole of the church has been re-pointed externally, and the windows on south side of chancel, which for many years have been blocked up, re-opened. The old pulpit and reading-desk, which are in the worst style of Italian architecture, of about the beginning of this century, are to be cleared away, and new ones substituted of appropriate design. The work is being carried out under the superintendence of Mr. Robert W. Edis, architect, of London and Huntingdon.

IMPROVED PICKAXE.—A new kind of solid pick is at present being manufactured by Messrs. Yates and Co., of Birmingham. The pick has no eye to it, and is so constructed that the handle can be fitted on in an instant, and when a pick is detached for repairs another of the same weight can be instantly put into the handle, even by a boy. The handle has a strong iron socket, into which the pick slips, and is keyed fast with a steel key. It is claimed that the amount of labor in using the new pick is much less than usual—the laborer being able to stake a much quicker and stronger blow without jar to the hand or risk. The pick is in use in the American army.

DECISIONS IN THE COURTS.

ARCHITECTS' CHARGES.

Broadbridge v. Treadwell.—*Court of Queen's Bench.*—This was an action to recover the sum of £50 15s. The defendant pleaded never indebted except as to £26 9s. paid into court.

The plaintiff is an architect, &c., carrying on business in Laurence Pountney-lane, and the defendant is proprietor of the Antelope, situate in Finsbury. The Antelope public-house is the property of the Ecclesiastical Commissioners. The defendant was desirous of making certain alterations, of putting the premises into repair, and erecting buildings in the rear, at an expense of about £500, provided he could get a renewal of his lease, which would have expired in 1867. The plaintiff was employed by the defendant to negotiate a further lease with the Ecclesiastical Commissioners, and to superintend the work required to the premises. He obtained the lease at a reduced rental, and made the drawings, &c., for the repairs, but before they were completed the defendant declined to employ him any longer. The question was as to the term of agreement between them. It was urged by the defendant that the plaintiff was to have two guineas for his trouble if he was unsuccessful in obtaining the lease, and, if successful, he was to have the carrying out of the work at 5 per cent. The plaintiff, however, charged now twenty guineas for obtaining the lease, £35 for superintending the repairs (which amounted to £529), and several items, making up the demand claimed by him.

The jury returned a verdict for the plaintiff for £10 10s. over the amount paid into court.

CASES UNDER THE BUILDING ACT.

Works to Buildings Demolished to half their Cubic Contents.—On the 28th January, Mr. J. H. Parkinson appeared before Mr. Woolrych, Thames Police Court, at the instance of Mr. E. Woodthorpe, District Surveyor, of Limehouse, to answer a complaint that, in rebuilding certain premises at the corner of Phoenix-place and Ratcliff-cross, he used a party wall which was of insufficient thickness on the ground floor, and raised the same of the height he required in 4½-inch work; that he built a wall in extension of this party-wall of the same insufficient thickness, contrary to Section 12 and to Schedule 1; that he built wood plates in the old party-wall, and allowed the ends of the joists to have a bearing on such wall at a nearer distance than 4½ inches from the centre thereof, contrary to Section 15, Rule 2; and that he fixed the woodwork of the shop-front nearer than 4½ inches from the line of junction of adjoining premises, contrary to Section 26, Rule 3.—The defendant, who appeared in person, stated that he considered the works executed by him to be merely a repair, the works being caused by the former premises being destroyed by fire. It was proved by the District Surveyor that the premises were demolished to more than half their cubic contents, and Mr. Parkinson was ordered to amend the whole of the irregularities within eight weeks, and to pay the costs.

Temporary Structures.—Mr. Stephen Peters was also summoned by Mr. Woodthorpe, for inasmuch as he had greatly extended and altered a wooden erection situate in the Commercial-road, Limehouse, without giving forty-eight hours' notice thereof to the District Surveyor, as required by the Act (Sec. 38). Mr. Woodthorpe stated that the building was originally placed upon wheels to evade the requirements of the Act, but that on the 18th January he discovered that alterations and additions had been made, and that the building had been rendered in a measure permanent by the introduction of wooden uprights or quarters let into the ground and supporting the roof, the sides being covered with weather boarding and canvas. He considered the building in itself dangerous on account of the inflammable nature of the material used; and further, that the danger was increased by the purposes for which the building was used—viz., a rifle gallery. The defendant pleaded ignorance of the Act, and the case was adjourned for four weeks, at the Magistrate's suggestion, to allow the defendant the opportunity of applying to the Metropolitan Board of Works for their permission for the structure to remain temporarily.

THE PROPOSED NEW BLACKFRIARS BRIDGE.

LAST Thursday the Court of Common Council held a special meeting for the purpose of taking into consideration the report by the Bridge House Estates Committee, having reference to Blackfriars-bridge, and recommending that a new bridge, of three arches, be erected, after the designs sent in by Thomas Page, Esq., at the estimated cost of £245,000. The Right Hon. the LORD MAYOR presided.

Mr. H. W. VALLANCE, the Chairman of the Bridge House Estates Committee, in moving that the report should be agreed to and adopted, referred at some length to the previous proceedings that had taken place in reference to the question, and said that even those who had an interest in "nursing" the question admitted that it was no longer advisable to maintain the old structure—(Hear, hear). The matter was referred to the Bridge House Estates Committee in March, 1861, and they considered the subject very carefully, and consulted the most eminent engineers that this country could produce, who had been selected by the City architect, and after the most careful consideration, they had almost unanimously agreed to the report that had been presented, and which, he hoped, would receive the sanction of the court. He said he believed that the real question that was to be decided was whether they were to have a bridge of five arches, which would suit the convenience of the London, Chatham, and Dover Railway Company, or whether they were to have one of three arches, which would afford much more waterway and considerably greater accommodation to the traffic of the river—(Hear, hear). Mr. Vallance then proceeded to call the attention of the court to all the points connected with the question at issue, and concluded by stating that neither he nor the Committee had any other object in view than that a bridge should be erected in the place of the present inconvenient and dangerous structure that would be an honor to the Corporation of London, and would comply with the requirements of the age in which they lived.

Deputy FRY proposed as an amendment that the matter should be referred back to the Committee for further consideration.

Mr. KEARNS supported the amendment, and in doing so, denied that the Committee had had sufficient opportunity of considering all the plans that had been presented to them, and he said that he was shocked to find that the Committee had come to the resolution to accept the plan that had been sent in by Mr. Page—(Oh, oh). So far from his having consented to this proposition, he moved two amendments to the motion and divided upon them, and these protests were upon the records of the Committee. He then proceeded to complain of the proceedings that had been adopted to obtain signatures to petitions in favor of a three-arch bridge, and cited some instances in which parties' names appeared who were unable to write, and entered into details in support of his argument, and concluded by expressing a hope that the court would not sanction the expenditure of a sum of £300,000, which in all probability would be the expense of the proposed structure, without first being well satisfied that when it was completed it would answer the purpose for which it was erected—(Hear, hear).

Several hon. members then rose to address the court, but

The LORD MAYOR interposed, and said that the question before them was one of very considerable importance, and it was not likely that the matter could be brought to a conclusion that day, unless they sat to a late hour; and he therefore suggested that the further discussion of the subject should be postponed.

The court unanimously agreed to this suggestion, and the debate, therefore, was adjourned for a fortnight.

THE EASTERN COUNTIES AND EAST ANGLIAN RAILWAYS.—The negotiation between these two companies is off. *Herapath's Journal* says that the minimum offer of the Eastern Counties is quite microscopic, and would require a high magnifier to the best of eyes to discover its annual increase.

FALMOUTH BREAKWATER.—The breakwater at Falmouth has been carried out to a length of 1,028 feet. The excavation for the second graving dock, 400 feet long, with entrance 65 feet wide, and to have 16½ feet of water over the sill at ordinary spring tide, is being rapidly proceeded with.

THE ART OF MEASURING.

AT a meeting of the Glasgow Architectural Society, held on the 20th of January, Mr. JAMES HOWATT, honorary treasurer to the society, read a paper on the "Art of Measuring and its Practical Bearing on those Concerned," chiefly with reference to Scottish practice.

After a few introductory remarks from the CHAIRMAN, Mr. HOWATT proceeded to say that the art of measuring was an ancient and honorable occupation, and that those who follow it ought to do so with integrity, honor unimpeachable, and the most careful and laborious accuracy. Some men scouted the need of a measurer, and declared the fees paid to him as lost money, which was a mere cobweb covering a great truth. This idea should never be held by those about to build, as the employment of a measurer was the cheapest method of executing a difficult problem and the surest method of arriving at truth. Another cobweb that might be easily brushed away was a feeling on the part of many that the duties of a measurer were very simple, and might be accomplished by anyone. "And it is not only the ignorant but the would-be wise who act upon this assumption." Mr. Howatt gave instances of inaccurate measurements to illustrate this part of his subject, and then proceeded to demolish another cobweb, which consisted in the assertion sometimes made, by those who seemed to be utterly ignorant of the amount of labor expended on measurements and estimates, that the fees were too large. He spoke advisedly when he said that many pieces of work did not pay the actual time employed on them, much less remunerated them for the years of preparation and expense necessary to qualify a measurer for his duties, while in no case were they more than adequately remunerated. Without entering into details he would say that, in his opinion, the duty of a measurer in preparing estimates was to lay down broad and well-digested principles, which he must carefully and consistently carry out, and not, as in a schedule which very recently came under his observation, to have one principle for measuring a front wall and another for measuring a back wall. Were this done they would not have tradesmen saying that they must know the measurer before they could know the mode of measurement. Again, he (Mr. H.) held that, in preparing his measurement, a measurer must use the same care that the principles of the estimate be accurately carried out therein. He would also urge on all engaged in the profession to study, with as much care as was compatible with their other duties, the styles and beauties of architecture, as they would thus be enabled to realise the creative genius of our talented architects, and more easily understand the sometimes very limited explanations tendered to them as specifications. A kindred feeling ought to exist between architects and measurers, from the close connexion of their duties; and a like feeling of respect should exist between measurers and contractors, neither the one nor the other usurping a position he is not entitled to hold. Finally, on this head, he would say to all—architects, measurers, and contractors alike—in their dealings with each other, "be courteous."

Mr. Howatt then brought under the notice of the society the necessity of having for every building of any importance detail plans and a specification, which it seemed to him, were quite indispensable to a proper and correct estimate. They all knew what mischief occurred when measurements exceeded estimates to any large amount, and the consequent difficulties in settlement. Sometimes they had plans so small and minute, that the sundry lines (say in a cornice) must bear an unheard-of weight of interest; and the stating a size and girth for these puzzle the most astute measurer. Yet according to such size and girth only was the contractor bound. The architect sometimes consulted these, and made his details to correspond therewith; but oftener, without any reference to them, he set his brains to work and made out the most elegant moulding he could. Now, were detail plans furnished for the more important parts of the work, this would in great measure be avoided, and the constant outcry for heavy material in place of the lighter material supposed by the contractor to be required, would be put down at once, and the tantalising examination of blue ink prices very much avoided. He was aware that this was not always the architect's fault; he knew that some proprietors were unreasonable, and demanded plans which would require to be got up by types and steam, instead of by the creative genius of the brain and pencil. Nevertheless, if they (architects) set themselves to demand time for the proper execution of their work, and to show the loss proprietors would sustain by not having proper detail plans and a specification, they would gradually get this matter fixed in the public mind as something conducive to cheapness and comfort. Cases of violation of good taste in buildings, as well as the marring of particular forms consonant to the period the building is intended to represent, result from this, not from any want of ability, but from want of arrangement at the commencement of the work. Moreover, this careful preparation of the plans would render unnecessary the great changes often introduced into buildings, which often placed measurements and estimates in contrast to each other. The terms used in specifications should also be clear and well defined.

After throwing out some hints unfavorable to the employment of incompetent measurers, Mr. Howatt came to deal with the question of "no after-measurement." There were many difficulties to contend with in preparing an estimate from plans. These plans were of necessity to a small scale, and many times did not exhibit details which were included in the estimate. Besides, changes invariably occur in the plans requiring after-measurement; the foundation is often deceptive, causing further changes. No doubt there are notable cases of uniformity between estimate and measurement, but it is the exception, not the rule. Then the contractor, if a wise man, will, in the case of "no after-measurement," add a sum to his offer to cover contingencies—this is not required where the work is measured after completion; but one great objection to "no after-measurement" was that it induced, on the part of the contractor, a nigardliness of material and workmanship that was plainly prejudicial to the work, as everything he could save was clear gain to him; while, in the other case, all contractors knew that any little more or less than the quantity provided in the estimate would be re-measured, and the value given. He had, therefore, no inducement to scrimp materials and work, being assured that the "middle-man" would give him what was the true meaning of the estimate in his after-measurement of the work. Nothing could be more honorable, as between man and man, than a carefully-prepared measurement, priced upon the basis of the estimate. In conclusion, he hoped that his brethren, and especially the architects, would receive these remarks in the kindly spirit in which they were given. It might be long ere such another opportunity might be afforded to measurers of drawing the notice of those whom, as a body, they respected to the small difficulties referred to above, and the removal of which would be a great advantage to both. This he knew, that the kindness received from many architects would never be forgotten by some of the measurers, and that the friendships of life had been much enhanced by the brotherhood of spirit manifested towards them.

THE BREAKWATER AT PLYMOUTH.—The works connected with the fortifications on the western side of Plymouth Sound have been considerably damaged by the late storms. The contractor's road, tramway, and landing-place, under Picklecombe Fort, Mount Edgecombe, have been washed away.

STEAM ON COMMON ROADS.—On Tuesday last, a heavy marine hoiler was successfully removed from the works of Messrs. John Laird, Sons, and Co., Birkenhead, to the large crane situate on the margin of the Great Float, by means of "Taylor's steam elephant," and a second boiler was removed on Friday. This is the first instance in this neighbourhood in which steam on common roads has been employed for such a purpose. Judging from the easy manner this machine was guided over the roads, it promises to become a most useful agent for transporting heavy loads, and it is equally applicable for discharging timber out of ships and afterwards drawing it upon the quay or from place to place, as required. One of these engines, manufactured by Messrs. J. Taylor and Co., of Birkenhead, has, we understand, been at work for this purpose in her Majesty's Dockyard, at Devonport, for upwards of two years, with great success.—*Liverpool Mercury.*

Correspondence.

THE MEMORIAL TO THE PRINCE CONSORT.

SIR,—There is too much reason to fear that we are about to fritter away once more a great opportunity for art-display. It is impossible to read the varied proposals as to the character of a memorial to the Prince Consort without feeling apprehensive that, when the nation has liberally poured forth its money, dissension between artists and dilettanti will have reached such a pitch as to compel the adoption of some wretched compromise.

Of all the ideas put forth, that broached by "Miles" in the columns of a daily paper, is the most extraordinary. His suggestion is insidiously framed so as to give any opposition the appearance of going counter to the wishes and feelings of the deceased Prince. On looking more closely into it, however, we detect, under this mask, the first move of the Gothic school of architecture. The obstinacy with which a Gothic design for the Foreign Office was fought for in Parliament, is fresh in our memory. By some, indeed, the question is thought to be not settled even yet. Stripping sentiment from the letter of "Miles," we find these two points:—

1. Prince Albert saw, and was much pleased with, a suggested design for the Guards' Memorial, in the shape of a cross "in a truly English style," and offered a site for its erection in Hyde-park, where stood till lately the circular reservoir.

2. The sketches for this cross are, doubtless, in the portfolio of the architect, and, with a little alteration, might be made suitable for the proposed monument to the Prince.

On the first point I need only remark that his Royal Highness had not, power to offer, as of himself, a site in one of the public parks, because they are under the control of the Chief Commissioner of Public Works, who is directly responsible to Parliament. "Miles" would have us understand that when Prince Albert saw the design as now executed, he withdrew his permission and countenance.

2. It would be in the highest degree derogatory to the memory of the late Prince to adapt a design made for another purpose—to cook a *rechauffé* of the ideas of any artist, however eminent. But the sketch, if suitable as a memorial of soldiers who died (of hardships and) fighting for their country, would be manifestly unfit to record a Prince whose triumphs were won, not in war, but in peace. The two most antagonistic principles in the universe could not be represented by the same material form. It is not difficult, I think, to guess what the "truly English" monument was,—a repetition, on a larger scale, of the well-known crosses of Queen Eleanor. It is this turning to precedent, this clinging to the skirts of antiquity, that cramps the freedom and impedes the progress of art. Individual architects can be detected in their works by a predilection for particular buildings with which, at an impressive period of their lives, they appear to have been so struck as never fully to recover from their effect. Thus the great Campanile at Verona, Libreria Vecchia at Venice, Palazzo Pandolfini and Farnese, Alhambra, Ospedale Maggiore, at Milan, Salisbury Cathedral, Norfolk flint churches, and others have, in turn, so inoculated the blood and affected the brain as to be always struggling to reveal themselves.

The whole discussion may be pronounced somewhat premature; but, having been raised, and as the national subscription is daily gaining volume, it may be well to consider whether, in minor provincial towns, the subscribers for a local memorial had not better apply such funds as they can raise to the metropolitan monument. You, Sir, have ably pointed out, both lately and in the case of Lord Herbert, how necessary it is to have a statue, a visible embodiment of the man. Let us then, have the statue, but (in such a climate and atmosphere as ours) lovingly covered and protected from the weather beneath a dome—polygonal—whose sides shall be painted in compartments, depicting scenes in the public life of the Prince Consort. Let us combine the arts of painting, sculpture and architecture in a grand impressive work, and thus ally all artists in a common bond. Some such edifice, placed on a flight of steps, with ample access and entrances, would hold a large number of persons. Its form would allow free passage and circulation, and its massive exterior would proclaim to the most ignorant a national temple raised to the memory of a Prince and a great man.

C. J.

THE PROPOSED BRIDGES AT BLACKFRIARS.

SIR,—You have lately once or twice alluded to the proceedings respecting Blackfriars-bridge and its proposed reconstruction.

It is, no doubt, a very important and somewhat difficult matter to determine how far the different requirements of railway and ordinary traffic can be accommodated without disfigurement to the Thames or the streets, and also with the least possible interference with the tidal action of the river.

All obstructions in the bed of the stream should be carefully avoided, and, should the Thames embankment ever be carried out, the abstraction of so much superficial area from the river will render it of the highest importance that the new bridges with which Father Thames is threatened should crouch by means of piers, &c., as little as possible upon his waterway.

How some engineers consider the appearance of their structures or those of their professional brethren, may be seen in the two bridges spanning the Medway at Rochester. The first erected bridge is really a handsome structure, but its effect, look at it from what point you will, is completely ruined by the hideous tube the railway people have erected alongside it.

How the citizens of Rochester could tamely allow such a monstrosity to be put up, or the engineer have the heart so to mar his predecessor's work, is beyond my comprehension; but a very useful lesson may be learnt from it by the citizens of London if they have the wisdom to profit by it, in not allowing their new bridge at Blackfriars to be put out of countenance by that for the railway. If Mr. Page's design for Blackfriars be ultimately adopted, and, as he is a man of taste as well as skill, I hope it may, could not some arrangement be come to by the Bridge House Estates and the railway to assimilate their structures, unite the useful with the picturesque, and out of two dissimilar works form an harmonious whole, which would really ornament the city, accommodate the traffic, and put no more obstructions in the bed of the river?

CIVIS.

THE SUPPLY OF PURE WATER TO THE METROPOLIS.

SIR,—My attention has been drawn to the subject of "artesian wells," on which a paper and discussion has been brought before the Society of Arts. There can be but one general opinion that the subject of "artesian wells" is in its infancy, and that it is only by bold, resolute experiments we shall arrive at good results. A good deal of prejudice naturally arises to keep these "artesian wells" from being developed as they ought; for as long as companies can pump out of the river Thames they will do so, although "death may be in the pot every time it is filled;" for it is certain "the more population increases the more foul must be the waste streams," and until some other supply is furnished the river must be the only resort and resource.

That "artesian wells" enough to supply ten times the population can be sunk in the metropolitan district cannot be doubted, for the quantity of rainfall can be easily calculated, and how much is retained in the absorbent sands.

The great points are to ascertain where are the best positions for sinking, and then to do so effectually, not by going down 1,300 or 1,400 feet, and stopping, when 200 or 300 more would have realised the object sought for—"plenty of water." Good sinking of permanent curbs, and boring afterwards with real good borers, would soon draw up such good water and abundance for every one; but perseverance must be used. And supposing, after all, that all the wells were failures, which they would not be, but very probable all successes, it is certain, on the testimony of Dr. Normandy, Mr. R. Hunt, and others, that plenty of good wholesome water could be obtained by drawing salt water from the sea through sand filters of from 20 to 40 feet thick into deep shore reservoirs or basins, from whence a supply inshore could be drawn for the general use and consumption.

It is most certain a vast degree of disease and sickness is now consequent to the impurity of London drinking waters, and these are getting worse instead of better. Something must be done to remedy this great evil.

Southsea, Feb. 4, 1862.

W. AUSTIN, C.E.

TENDERS.

DWELLING-HOUSES, FOREST-GATE.

* For erecting a house at Forest-gate, Essex, for J. Littlefield, Esq. Mr. S. W. Iron, surveyor, Mile-end.			
Jacobs	£325	J. and W. Smith	£470
Hennings	480	Larke	457
Sergeant	479	Rivett	451
Read and Son	473		

For completing five houses at St. Johns-wood for the Temperance Permanent Land and Building Society.

G. Gumnow	£681	0	6	J. Potter	£500	0	0
J. Chamberlain	655	12	0	J. Shilton	480	0	0
J. Fawcett	585	0	0	J. Richards	479	0	0
J. Nutt	552	0	0	B. Cordwell (accepted)	420	0	0

For erecting a house for H. D. Cuff, Esq., at Forest-gate, Essex. Mr. S. W. Iron, surveyor, Mile-end.

Jacobs	£540	J. and W. Smith	£467
Sergeant	493	Rivett	462
Hennings	490	Larke	457
Read and Son	483		

CHURCH, YORKSHIRE.

For the rebuilding of the parish church of the Holy Trinity, Startforth, Yorkshire. Messrs. W. and J. Hay, architects. Each party took out his own quantities.

Marrin	£1,629	Robson	£1,335
Applyby and Carter	1,580	Jones	1,306
Applyby	1,500	Borrowdale	1,275

HOUSE AND SHOPS, STRATFORD.

For building three houses and shops for Mr. Josias Pidgeon, in the Grove, Stratford, Essex. Mr. John M. Dean, architect, Stratford. Quantities supplied by Messrs. Hovenden and Heath.

Reed	£1,769	Hedges	£1,448
Rivett	1,643	Ennor	1,439
Wood and Son	1,500	Perry (accepted)	1,395
Case	1,477		

SCHOOLS, HANWELL.

For alterations at the Central London District Schools, Hanwell. Quantities not supplied.

	Internal.	External.	Total.
Batley	£210	£375	£585
Clements	207	220	427
Child, Son, and Martin	190	203	393
King	178	146	324
Reynolds	174	128	302

COMPETITIONS OPEN.
BRIDGE.

BRISBANE RIVER.—The Municipality of Brisbane are prepared to receive designs and tenders for the construction of a bridge over the Brisbane river, at Brisbane, the capital of Queensland. The author of the best design, at the lowest cost, will receive a reward of £150, or be employed to carry the work out, providing he furnishes sufficient proof of his competency and experience in similar undertakings. A premium of £80 will be awarded to the next best design, and £40 for the next best. The plans, specifications, and estimates of the first and second designs will be retained by the Corporation as their property. The remainder will be returned to the competitors; but the corporation will incur no responsibility as to their safe delivery. Each set of drawings, and the documents accompanying them, are to be distinguished by a motto only, and accompanied by a letter in a sealed envelope, marked with the same motto, and containing the author's name and address, and such testimonials as he may think proper to furnish. Professional judges, being non-competitors, will be appointed by the Corporation to determine the merits of the respective designs. Eligible tenders for the work, accompanying the design, will be entertained. All drawings and tenders to be delivered at Gresham House, on or before the 15th of March next. Copies of the instructions to competitors, and the plan of the city, can be obtained of F. Mangies and Co., the Colonial agents, and agents to the Municipality of Queensland, 86 to 88, Gresham House, Old Broad-street, London, E.C.

DRINKING FOUNTAINS.

CLERKENWELL.—Designs are required for street fountains, accompanied with prices, for the Committee of Works of the vestry of the parish of St. James and St. John, Clerkenwell. Address, Robert Paget, vestry clerk, Vestry Hall, 23, Upper Rosoman-street, E.C.

CONTRACTS OPEN.
HOSPITAL.

DEVONPORT.—For the erection of the Devonport Stonehouse, and Cornwall Hospital, at Devonport. Drawings, &c., with Alfred Norman, architect, Ker-street, Devonport, until the 22nd February, where tenders, sealed, and endorsed "Tender for Hospital at Devonport," must be delivered not later than eleven a.m., on the 24th February.

CATTLE MARKET.

COLCHESTER.—For the formation of the New Cattle Market, in Colchester. Plans, &c., at the office of James Cooke, Esq., C.E., Colchester. Tenders, under cover, addressed to S. Turner, town clerk, Colchester, on or before the 17th Feb.

WAREHOUSES.

LEEDS.—For the erection of three first-class woollen warehouses, in King-street, Leeds. Plans, &c., at the office of Mr. Cuthbert Brodric, architect, 2, Park-place, Leeds, to the 10th February. Bills of quantities will be provided for parties requiring them. Sealed tenders, addressed to "The Directors of the Leeds King-street Warehouse Company, Limited," to be delivered at the Company's office, 1, Bond-place, Leeds, not later than February 12.

CHURCHES.

PEMBROKE.—For the proposed restoration and reseating of the parish church of Nevem, near Newport, Pembroke-shire. Drawings, &c., with Mr. David Phillips, schoolmaster, Nevem, to the 12th Feb. inclusive. Tenders prepaid, addressed to the architect, Mr. R.J. Withers, 51, Daughy-street, London, W.C., of whom further information may be obtained, by Feb. 13.

CHESHIRE.—For the works to be done in a new church at present in course of erection at Waterfoot, near Newchurch, Rosendale. Plans, &c., at the Duke of Buccleugh Inn, Waterfoot, on application to the Rev. R. Smith, Glen House, near Newchurch Station. Tenders to be delivered to James Crabtree, Esq., Newchurch, on or before 10th February, 1862.

DUMFRIES (N. B.).—For executing the mason, joiner, plasterer, slater, and plumber works connected with the Free Church to be erected at Kirkmichael, Dumfriesshire. Plans, &c., with Mr. Blues, farmer, Dalruscan, Thnwald, with whom sealed tenders are to be lodged before 11th Feb.

BRIDGE.

IRELAND.—For building an iron bridge over the river Fergus, at Ennls. Plans, &c., at the office of the secretary of Grand Jury for the county of Clare. Tenders, sealed and endorsed, "Tender for Iron Bridge," and directed to the secretary of Grand Jury, co. Clare, by Feb. 13.

COASTGUARD STATION.

LINCOLN.—For the erection of a coastguard station at Oliver's Gap, Theddlethorpe, St.

Helen's, Lincolnshire. Drawings and specifications at the Coastguard watch-house, Saltfleet, or at the Admiralty Coastguard office, 12, Spring-gardens, London, S.W. Tenders to be sent to the latter office by 12 noon, 10th February, under seal, and directed to the Commodore Controller General of Coastguard, and endorsed "Tender for Oliver's Gap Station."

MILITARY WORKS.

LONDON DISTRICT.—For works and repairs at the undermentioned stations, separately or otherwise, from the 1st of April, 1862, to 31st March, 1865, inclusive, viz.—London, comprehending the Tower of London, all the barracks and other buildings within five miles of that place, and Turnham-green Militia Barracks; Croydon (and Carshalton Barracks; Hounslow, Hampton Court, and Kneller Hall Barracks, and Richmond Militia Barracks; Windsor Cavalry and Infantry Barracks, and Belvedere Fort; Militia Barracks; Barnet; Militia Barracks, Hatfield; Militia Barracks, Uxbridge. Schedules and printed forms of tender, price 7s. 6d. each, and all necessary information, on application at the Royal Engineer Office, 11, James-street, Buckingham-gate, London, S.W. Sealed tenders will be received at the War Office, Pall Mall, London, S.W., addressed to the Director-General of Contracts, on or before the 21st of February, 1862.

YORKSHIRE.—For building a storehouse at Scarborough for the United Corps of Militia Artillery, East and North Yorkshire. Plans, &c., at the Adjutant's Office, No. 19, Mulgrave-terrace, Scarborough; at the offices of Messrs. Leeman and Clark, in York; and at the office of Mr. Trevor, in Northallerton. Sealed tenders, addressed to "The Chairman of the Committee, and marked "Tender for Militia Storehouse, &c.," to the Adjutant's Office, in Scarborough, not later than Tuesday, February 18.

SUPPLY, &c.

SANDOWN.—For the supply of about 1,600 feet of 12-inch stoneware socket pipes, and about 1,100 feet of 9-inch ditto, with junctions and bends, for the Sandown Local Board of Health. The specification, with the conditions of contract, at the office of the Surveyor, Mr. F. Newman, 16, George-street, Hyde. Sealed tenders to be delivered to T. B. Hall, clerk to the Local Board, Sandown, Isle of Wight, by noon, on February 14th, and endorsed "Tender for Stoneware Pipes."

CONVICT PRISONS.—For the supply of timbers, deals, alates, lime, sand, bricks, lead, glass, wrought and cast iron, ironmongery, gas and water pipes, white lead, oils, &c., for 12 months from the 1st of April next, to the 31st of March, 1863, for the Pentonville, Millbank, Brixton, Portland, Portsmouth, Chatham, Parkhurst, Dartmoor, and Woking Prisons, and the Refuge at Fulham. Tenders, pre-paid, addressed "The Directors of Convict Prisons, 45, Parliament-street, Westminster, S.W., on or before noon of the 1st March. Forms of tenders at the several prisons before named, or at the office of the Directors, 45, Parliament-street, on and after the 15th February.

SOUTHAMPTON.—To supply and lay down certain new paving in various parts of the town of Southampton. Specifications with Mr. J. G. Poole, surveyor, Landsdowne House, Southampton. Sealed tenders, endorsed "Tender for Paving," to Charles E. Deacon, clerk, Public Health Office, Southampton, on or before 15th Feb.

THE ROAD ACROSS HYDE PARK.—Yesterday the St. Pancras vestry, on the motion of Mr. Lawford, unanimously resolved to oppose any attempt to make the new road across the park at the expense of the metropolis, and called upon the members of the Metropolitan Board to oppose it in that body. Mr. Farrer said the Exhibition Commissioners last time realised a profit of £150,000, and as this road was for their benefit, let them pay for it.

LIVERPOOL CEMETERY COMPETITION.—The Committee have decided upon awarding to Messrs. Lucy and Littler, architects, the first premium for designs for the chapels, &c., to be erected at the new cemetery, and the second to Mr. Reed, architect. Messrs. Lucy and Littler will be appointed to carry out the works.

THE WROXETER EXCAVATIONS.—The work of excavation on the site of the ancient city of Uriconium is progressing, and the men employed for this purpose are now investigating the mounds and trenches said to indicate the boundaries of the ancient city. It has long been a question among archaeologists whether there ever was a stone defence as well as earthworks around the city, and hitherto attempts to discover the walls have been unavailing. Guided, however, by a large figured stone which has been from time immemorial in a rill of water which bounds the glebe land, the men cut a trench directly across the field still called "Old Walls," and being a part of the rector's glebe, and here they found what is thought to be the old wall of the town of Uriconium. They have found a stone wall exactly where the old Ordnance map places the walls. From about 8 inches to 18 inches below the turf they have disclosed a bed of rough, unheven stone set in clay, and of no great thickness. It is exactly 6 feet wide, and has been uncovered for a distance of 34 yards, but it can be traced above 100 yards more in the adjoining fields. The stone wall is not on the top of the ridges, but on the outer slope of one ridge, giving a tract of high ground immediately within the wall. These interesting remains are believed to be only the foundations of the real wall, the superstructure having been carried away. It is proposed to try some other part of the boundary in the hope of discovering some of the upper part of the wall.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favor us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

STEPHEN W.—Paper sent shall be looked into.

SUBSCRIBER TO THE "BUILDING NEWS" (Cumberland).—Rowner and Co., Rathbone-place.

G. J. C. D.—A very objectionable arrangement.

R. E.—Shall appear if suitable; thanks.

V. R. S.—We cannot say.

M. G. W.—Not of sufficient interest to our readers.

A. READER (Gloucester).—Shall appear.

M. R. A.—Next week.

R.—We cannot assist.

JAMES W.—In course of preparation.

Z. Y. Z.—We have no doubt as to the legal aspect of the case, but cannot interfere.

A PUPIL.—Yes, deferred for want of space.

A BRUIEN (Yorkshire).—The facts are already in our possession.

B. R.—Received.

MESSRS. K. and G.—Shall be given next week.

MR. BLANK.—We cannot say.

GEORGE M.—N.—Below our mark.

Q.—Thanks.

LET SQUARE.—Apply by letter.

A HOUSEHOLD.—Spring-gardens, Charing-cross.

R. R.—Nothing of the kind.

X.—Review will be given.

NOTICE.

The Seventh Volume of the BUILDING NEWS is now ready, bound in cloth, price 21s. Subscribers can have their copies bound, either with or without the advertisement pages, for 4s. 6d., on sending them to the office. Cases ready for binding the volume may be had price 2s. each.

* * All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old Bow-street, Strand, W.C., except letters referring to advertisements or other business matters which should be addressed to the Publisher, 18 to 21, Old Bow-street.

Advertisements are received up to six o'clock on Thursdays.

THE REMOVAL OF THE MUSEUM COLLECTIONS TO SOUTH KENSINGTON.



Tis hard, indeed, if the public cannot be made to believe that Brompton is the true centre of London, and the fittest site for every conceivable purpose under the sun. You must eat your whitebait at Greenwich, and your oysters on Lake Fusaro. So pictures and gardens, nature and art, are nowhere to be enjoyed in such perfection as beneath the shade of the "Boilers." Visitors are not yet deposited by a railway at the doors of the South Kensington Museum, but they will be. No one is thinking of carrying a railway into Great Russell-street, or to any other museum; so there can be no doubt, as the authorities at South Kensington assure the inhabitants of this metropolis,

that theirs is, or will be, the single establishment most readily accessible from east, west, north, and south.

It would be mere waste of time to say anything about the situation. Those in favor of it do not deny that South Kensington is an outlying district of London; but they maintain that, practically, locality is a matter of no importance, as when the working man goes out for a holiday, he takes with him his wife and children, and thinks nothing of distance. If anything, he rather prefers a walk of four miles or so, when, at the end of it, he has fresh air and a pleasant prospect. "The public leave the London streets," says Mr. Bowring, "and cross the London parks, and soon arrive at the site." Without discussing the exactness or otherwise of these statements, it may be not amiss to notice the carefully-compiled weekly return of visitors. Here is one announcement:—

SOUTH KENSINGTON MUSEUM.—During the week ending Jan. 25, 1862, the visitors have been as follows:—On Monday, Tuesday and Saturday, free days, open from 10 A.M. to 10 P.M., 6,901; on Wednesday, Thursday, and Friday, students' days (admission to the museum, 2d.), open from 10 A.M. till 4 P.M., 1,231; total, 8,132. From the opening of the

public, 6d.), open from 10 A.M. till 4 P.M., 2,454,626.

The object of this departmental arithmetic is clear. It is as if they should say, "Look here, see what an enormous number of persons visit our collections at Brompton, proving at once their popularity and convenience of access." At first sight such seems to be the fact; but when it is remembered that *no other free public exhibition is open in the evening*, any comparison between the numbers visiting South Kensington and those who go to the National Gallery and British Museum is ridiculously unfair. Let our readers imagine what would be the effect on the annual totals at the two last named institutions if they were to be opened *three days* in the week till ten p.m. We find it stated that the attendance at South Kensington is "nearly equally divided" between the day and the evening, so that from 35 to 40 per cent. must be deducted from the weekly total in order to place the question on its fair and proper footing. We pass over the consideration that refreshments are sold in the building, that the museum stands amid an idle population, and is much frequented by nurse-maids and children, although these must affect considerably the daily average. We have been led into making these remarks because, bound up with the report of the Committee on the British Museum, is a statement of the numbers annually visiting various public institutions, which are divided into "exhibitions in town and exhibitions out of town, to which the objection of non-accessibility would apply."

The Science and Art Department has won over to its views the Government which, on a recent occasion, put forth its whole strength of official Trustees in order to get a final decision on the removal of some of the contents of the British Museum. A rumour was industriously circulated that part of the Zoological Collection was to be conveyed to South Kensington during the recess. It proved, however, that the Trustees had advised the transfer of the Mineralogical and Geological Collections. This step can be carried out only with the sanction of Parliament. And we earnestly hope that, when the motion is brought forward, the independent members of the House of Commons will meet it with the most strenuous opposition.

The interest and delight taken by the general visitors of the Museum in the birds forbid the advocacy of their removal. The Trustees acted wisely in making their first attempt on the minerals and fossils. Here was the chink in which to introduce the thin edge of the wedge. Let them

succeed, and other collections will infallibly follow. The keepers of the departments assailed are opposed to any transfer, so that the resolution of the Trustees is marked by the distinguished qualities of being contrary to the plainly expressed opinion of those officers, in defiance of the remonstrance of the whole scientific world, in scorn of public convenience, and in the teeth of the Commons' Report.

The objects singled out for judicial separation cannot be packed and unpacked without injury to many, and some time must necessarily elapse during which they will be unavailable for purposes of study. "The mastodon," Mr. Waterhouse says, "is in a very bad condition." Its constant repair is rendered necessary by the mere walking of the people. He believes that it could not be moved, or, if moved, that it would have to be so made up as to become worthless. Beside the destruction of some, and injury to other specimens, there is a risk of the smaller ones being detached from the tablets to which they are affixed with gum, and of their identity being thus entirely destroyed. As many of these are type specimens, from which figures and descriptions have been taken and published, the loss to science would be considerable. Of the minerals in the possession of the Museum, a great number are not exhibited, but out of these a large proportion "would not be worth cataloguing." Shut up in drawers are inferior duplicates which, the keeper states, are positively rubbish, and, if shown, would not be worth the value of the ground on which they stood. We shall be curious to know if it is gravely proposed to transfer these valueless stones to the other end of London. As the Museum has power to sell, or to exchange, but not to give, it seems more than probable that we may yet have to witness the farce of carting this rubbish to a distance of three miles and a half, unless Parliament has strength to resist the Circæan blandishments of South Kensington.

This project of splitting up the national collection is viewed with the strongest dislike by every scientific man. It has been reported against by the Committee of the House of Commons, appointed to take evidence on the matter, as one that "would excite much dissatisfaction, not merely among a large portion of the inhabitants of the metropolis, but among the numerous inhabitants of the country, who from time to time visit London by railway." Not only so, but eminent foreigners have expressed their regret at hearing that any such idea was entertained. Sir R. Murchison expressly stated this fact before the Committee, and handed in a letter on the subject addressed to him by M. de Verneuil, member of the Imperial Institute of France. The writer says:—"The British Museum, as it now stands, is a monument unique in the world, which we envy you the possession of, and the preservation of which concerns your national glory. To bring together in a single assemblage the productions of nature and the *chefs-d'œuvre* of art is a grand and noble conception, which should not be abandoned. In our country nothing similar exists." M. de Verneuil strongly urges that every effort should be made to maintain the establishment in its integrity. "Endeavour," he says, "to have it extended where it originated, and where, up to this day, it has met with all those conditions which have insured its prosperity—remove houses and make room for it." This is, obviously, the better course to pursue, and the one recommended by the Committee after the fullest inquiry. Ground to the extent of 5½ acres can be obtained on three sides of the building; and, even if there were not this resource, much space might be gained by appropriating the houses now occupied by officials.

The dismemberment of the British Museum is disapproved of by every scientific naturalist, and by the keepers of all the departments. The single exception is Professor Owen, who, if the decision of the Trustees hold, will find himself like the "engineer hoist with his own petard." He says in his evidence that he objects to the transfer of the mineralogical collection; he thinks that the various classes of natural objects "should all go together, or stay together." Formerly Professor Owen thought as other leading men, and signed, in company with them, a memorial to the effect that any removal would be viewed by the mass of the inhabitants with extreme disfavour, and that persons from the eastern, northern and southern parts of London would feel it very inconvenient to resort to any distant locality. He has changed his opinion, but even now he owns that he would much prefer to have room for future extension found at Bloomsbury. He considers a space of at least five acres so essential to the right and healthy progress of a national collection of natural history as to outweigh the conveniences of any particular locality. The learned Professor adds "I love Bloomsbury much, but I love five acres more."

With the innate tendency which every one has to ride his own hobby, this eminent naturalist makes such extraordinary demands for space, and his ideas as to what a national collection should be are so vast, that the State would be heavily taxed in the attempt to carry them into execution. On all hands we hear complaints that the collections at the Museum are already so unwieldy and extensive as to bewilder and confuse, instead of instructing the visitor. But give Professor Owen the rein, and we honestly believe that an average parish would hardly hold the multitudinous objects. Birds, beasts, and fishes—all we must have; animals that live on the earth now, and every extinct species; species and varieties of species, represented by male, female, and young; one entire skeleton of the male and female of each genus, and, where there is any marked diversity of species, a skeleton of each.

Though we actually possess 12,000 specimens of fishes, we exhibit only 754. We are badly off for sharks—British sharks, 35 feet in length, which frequent our coasts. Such have been thrown up at Brighton, Worthing, and elsewhere. The only sharks we have are put between the wall-cases and the ceiling, where their distinctive characters cannot be seen or pointed out. We do not exhibit a single whale. As this animal is one with which English capital and English enterprise have largely dealt, the Professor

thinks that we ought to preserve at least one good specimen. If not, we shall be open to the reproach earned by the Dutch sailors, who, in their voyages to Batavia, were so intent on killing the dodo for food, that they ignored its value to science; the bird is now utterly extinct, and we show a solitary dried foot as one of our greatest curiosities. The public will be more easily reconciled to the absence of the whale when they hear that the dried skin is apt to become so offensive that few visitors would care to enter the room in which the animal is exhibited. The whale shown to country folk turns out to be an impudent imposture, and is really canvas stretched over a wooden framework, and cleverly painted.

Professor Owen would be satisfied with nothing short of a gallery that should contain every known species of mammalia. All must be obtained, and not only obtained, but exhibited. Enormous as is the space required—850 feet long by 50 wide—it would be insufficient, when we consider the great size of some of these mammals. Take the elephants, of three varieties, African, Indian, and Sumatran; to exhibit a full-grown male and female and the young animal would alone fill a fair-sized room. And, to turn to our whilom friends of Baker-street, where on earth should we put the cattle of various breeds, and other domestic animals, as horses and dogs? These last present considerable difference in the growing stage, as the greyhound; and, if we are to act on the rule laid down, we must show three specimens of each variety. The integument of many species of this class renders them difficult to stuff and set up; and thus some excuse may be found for the fact that our present mammalian saloon is a ludicrous caricature. The tumble-down attitudes and botchingly sewed skins of the animals make every one glad to pass through it as quickly as possible. The confined space and darkness are here of positive service in concealing these wretched creatures, which would ill bear the full light of day, or "proper exhibition."

The whole area devoted to natural history is at present 50,000 feet, and we are asked to provide 485,100. The Zoological collection is now contained in 37,500 feet, and Professor Owen estimates the required space (looking forward, of course, to future needs) at 240,000 feet! If the whole division of natural history were to be moved to some other locality, he would like to have 5 acres for a two storied building, and, for one of a single story, 10 acres!*. As these demands are hopelessly extravagant, and as the line must be drawn somewhere, what we have to consider is how, by a reasonable expenditure of public money, to make our collections most attractive to casual visitors, and most useful for purposes of study. Professional instincts would, perhaps, prompt us to lean towards the Department of Antiquities, in which the keeper wants 61,469 feet additional; and might, therefore, suggest a clearance in its favor of the Natural History Collections; but we prefer to view the subject at a broader range from the standpoint of the general public, and especially of the class dependent on wages, whose instruction is one (professedly) main object of the British Museum.

If it can be shown that the public, including in this term the crowd of mere holiday makers as well as the more intelligent, who really visit the Museum in order to obtain from its collections information as well as amusement, and that students, from the most cultivated and eminent persons down to the humble inquirer who has had his curiosity excited by some slight elementary work, will, each and all, be benefited by a rearrangement of the departments on another principle of exhibition; if the idle gaze of the ignorant and the thoughtful researches of the learned can be gratified in the self-same way, why should we hesitate to achieve so desirable a result? If, in addition, this end can be attained with a just regard for the national pocket, the adoption of any other system seems fatuous and absurd.†

FALL OF HOUSES AT HACKNEY.

ON Wednesday morning, about 10 o'clock, another accident of this kind happened in the Amherst-road, Hackney, near the railway station. On the south side of the road a range of houses, three stories in height, and having shop fronts, are in course of construction by Messrs. Amos, builders. The roofs had been covered in, the carpenters were engaged in laying the floors, and plasterers and laborers were occupied on the scaffolding, when a rattling noise was heard, and the next instant the front walls and the roofs and the whole of the floors of the second and third houses from the Hackney end of the road fell, dragging with them a portion of the end or corner building. The men at work, of course, fell, and were buried beneath the mass of ruins. After great exertion twelve persons were got out, two being quite dead. A similar accident is said to have occurred some months ago in the same locality.

We hope that a most searching inquiry will be instituted as to the cause of this accident, for it is quite time that some one should be held responsible, and that we should be able to go out without fear of being precipitated into an area, or of being crushed by falling houses.

FIRST CITY OF LONDON ENGINEERS.

AT a meeting of this corps, held at the City of London National Schools, White-street, Finsbury, it was resolved to form an artisan company, to be composed of the trades authorised for the Royal Engineers, viz., carpenters, joiners, cabinet-makers, masons, bricklayers, plasterers, smiths, engine-fitters, millwrights, coopers, painters, sailors, collar-makers, miners, draftsmen, &c. Members of the trades enumerated will not be required to pay an entrance fee, and will be provided with the uniform and accoutrements on terms to suit their convenience.

THE APPROACHES TO THE EXHIBITION BUILDING.

IMMEDIATELY after the beginning of the works at the International Exhibition building, we called attention to the inadequate nature of the approaches to it, and to the inevitable "block" which would take place in almost every one of the neighbouring thoroughfares when the tide of visitors flowed to South Kensington. It needed no great amount of foresight to arrive at this conclusion. The spectacle of entangled carriages and troubled Jehus seen in the Exhibition-road on an ordinary flower-show day at the Horticultural Gardens is a sufficient indication of what may be expected when the concourse of carriages is increased twentyfold, and when omnibuses, cabs, vans, together with stage-carts and every species of middle and lower class vehicle are likewise driven there to mingle in the confusion. We all recollect the congested state of the main London streets on the night of the Peace Celebration in 1855. If we will but fancy such another concrete mass of horseflesh, carriages, and humanity wedged into every road and lane around the Exhibition building, we shall have but a mild idea of the difficulties and disasters which will belt it like a Pasaal ring. Everybody seems to anticipate this "coming tribulation," but no one seems powerful enough to avert it. Mr. Cowper has been coquetting for the last three months with the parochial authorities of Paddington and Kensington, with a view of inducing them, jointly or separately, to make a road across the Park; and they, in their turn, have hoped to induce him to do it. Both parties desired the benefit of the road, but neither wished to pay for it; so the curtain fell upon the comical farce at that point when they mutually became acquainted with the object of each other's tender protestations. They then joined in an attack upon the unfortunate Board of Works, and thus diverted the growing discontent from themselves to that body. One would have thought the Board of Works was already sufficiently weighted; what with sewers, embankments, and speechifying members, it is not likely to make much progress in the matter. We may guess very well what their proceedings will be—to talk about it for weeks, to refer it to a committee, to listen to the representatives of the interested parishes, who will, of course, advocate it, to hear the opposition of other members, who desire an outlay to be made—where it is, of course, much more needed—in their own districts. Thus the subject will be laid out for death and burial, unless it be snatched from their stifling atmosphere.

The Exhibition Commissioners have received numerous suggestions upon the matter, but they have waited patiently, like the prey of the box-constrictor, to be compressed in its grasp or to be relieved by some one "in authority." The doughty champion has at length appeared in the person of Sir R. Mayne, but, with all the knowledge, he has not the weapons with which to subdue the growing monster. The Commissioners admit the value of his suggestions, and "entirely concur" in the opinion that the removal of the obstructions are essential to the safety and comfort of the visitors, but they add that "Sir Richard Mayne has only embodied the substance of what they already knew." If so, why did not they take steps to remedy it? They erected their building amidst a web of narrow, crooked lanes, and are as much to blame as a man who should build a house without a staircase. It is all very well to throw the responsibility from their shoulders, and to talk about the "discredit which will naturally attach to the metropolis if the approaches to the Exhibition are found in their present state on the 1st of May."

The Commissioners may be assured that the first blast of the anticipated discredit will very justly be towards them. All that the metropolis should be concerned about is to make sufficient thoroughfares for ordinary metropolitan traffic; it is no part of its duty to provide for the approaches to a temporary building, at a cost which would cover works which are urgently and permanently required, and simply because the promoters have planted their building in a spot unapproachable by existing roads. It is, beyond all question, the Exhibition building which necessitates the new cuttings, the expense of them ought consequently to have been calculated for and provided from its funds, the more especially as it is but a temporary structure.

The Commissioners will take all the money received at the doors, and the public will pay for its enjoyment. Had the Commissioners six months ago expressed the convictions which they now give utterance to, of the absolute necessity of improved approaches, and had they been firmly told that they must look upon such necessity as one which exclusively appertained to them, there is no doubt that they would have found the money, and have discovered it to be to their interest to afford safe passage to and from the building. They, however, found it convenient and economical to shut their eyes to this acknowledged apprehension, and now strive to shift the discredit to the "metropolis."

We are now within three months of the opening of the Exhibition, and no step has been taken which brings us a yard nearer to the end of the difficulty. Mr. Cowper, who found money for making a road in the Park, has no money for cutting one across it; the Commissioners earnestly trust that the "Government, the Metropolitan Board of Works, the various parochial boards and other bodies"—every one, in fact, except themselves—will not hesitate to take decided steps, i.e., to find the money. All these several Boards, on the contrary, earnestly wish that the Commissioners would make the honorable sacrifice. No one, seemingly, will do the work, and no one apparently can be made to do it. One little attempt at compromise, or at joint action, is amusing. Mr. Cowper offers, on condition of the Board of Works finding the necessary money, to procure a Bill from Parliament which will secure the road to the public.

Sir R. Mayne now comes forward, and in a very able letter to the Exhibition Commissioners, sums up the obstacles which must be removed, and the new approaches which must be made, before he can undertake to keep

* (Question 727, 728) 11 acres 21 poles, with libraries, offices, residences, and everything to make the whole complete.

† This estimate provides for all the present collections and also for moderate accessions.

‡ To be continued.

order in the streets. He insists on the absolute necessity—"1st, of the formation of a new road across Kensington-gardens; 2nd, opening Park-lane into Hamilton-place and Piccadilly; 3rd, of widening the Brompton-road; 4th, widening the short street from Ebury-bridge into Sloane-square; 5th, of making a tramway or a common road connecting the railway station near Kensington with the Cromwell and Gloucester roads; and, 6th, the removal of the barriers in Exhibition and Cromwell roads." The "observations" tacked to the Commissioner of Police's letter show very clearly that the police will have quite enough to do even if all his suggestions are carried out; but we are afraid, from the courteous reply in which Sir Richard is referred to all bodies "with whom the power may rest," that the Exhibition Commissioners will do nothing to facilitate the labor of the police, or to further the comfort of their visitors.

The Government does not appear to have power to make anybody do the work or rather pay for doing it. It had better therefore meet the difficulty at once and vanquish it. The approaches must be made, in spite of the affected indifference of the parties interested. Let Mr. Cowper but confess his inability to compel others, and Parliament will, we hope, grant him sufficient funds to dispense with even the advice of the irresponsible bodies. We should contentedly leave him to adopt the suggestions of Sir R. Mayne, and to carry them out with the same energy and determination which he evinced in forming the famous "ride." The inhabitants of Bayswater will even forgive him that "intrusion upon the privacy of the gardens," if he will but intrude upon it still further, and give them, gratuitously, a road across them.

If the Government fences with the matter as the other bodies have done, we must take the fruit of the Exhibition with its encompassed ring of discomfort. The public must calculate on inconvenience and disaster when it visits South Kensington, even as it bargains for thorns in plucking gooseberries, but it will be no more reconciled to the folly and inactivity of the Commissioners and "other bodies" when smarting from the consequences of it, than it is now when only anticipating it.

THE ART-UNION.

WE have received the engraving of the London Art-Union for the forthcoming distribution. It is a large and costly work, engraved by Mr. Sharp, from F. Goodall's picture "Raising the Maypole." Of the composition of the picture we cannot speak very highly; something to unite the two groups into which it is divided seems wanting, and this is not supplied by the maypole, which, occupying the centre, is not very happily posed. Either of the principal groups is satisfactory in itself, but attention is not sufficiently directed to the event—raising the maypole. It is a fine engraving, however, and could not, under ordinary circumstances, be obtained for double the amount of the subscription.

It appears that the Society has collected and expended over £280,000 in the advancement of the objects for which it was established.

THE PROPOSED NEW ROAD ACROSS HYDE-PARK.

AT the usual weekly meeting of the Metropolitan Board of Works, held on Friday, at the offices, Spring-gardens, Mr. JOHN THWAITES, the Chairman, presiding; Mr. POLLARD, Clerk of the Board, read a letter which had been received from the Right Hon. W. Cowper, First Commissioner of Public Works, in which he suggested that the proposed new road across Hyde-park (to give increased facilities of access to the ensuing Great Exhibition) should be carried out at the expense of the Metropolitan Board. He also stated in the letter that the estimated cost of the proposed road was from £30,000 to £40,000, and that if the Board would undertake the formation of the road at their own expense, he would undertake to obtain an Act for the purpose of securing to the public a permanent and unrestricted use of the road. Some members of the Board expressed an opinion that the road would in all probability cost at least £60,000.

Mr. ECKETT moved, in accordance with notice,

That considering there are many public improvements required in the metropolis which are of greater importance than that of making a new road across the property of the Crown, in Hyde-park, and which the Board at present cannot effect, from not having suitable means for that purpose, this Board therefore does not deem it expedient that it should undertake the making of the proposed new road across Hyde-park.

Mr. BROOKER seconded the motion.

Mr. ROCHE moved, as an amendment,

That the letter of Mr. Cowper, of January 30th, 1862, be referred to the Streets Committee for consideration and report.

Mr. LE BRETON seconded the amendment. After a long discussion the amendment was carried by a majority of 22 to 17, and thus became a substantive motion.

Mr. LEGG then moved as an amendment upon it,

That Mr. Cowper be informed this Board decline to take upon themselves the formation of the proposed road, unless Government place at their disposal funds for such purpose; the Board having already deferred the consideration of many great improvements in the metropolis, in consequence of not having funds to carry them out, but are prepared to take measures forthwith for the formation of the proposed road through Hyde-park, in accordance with the suggestion contained in the letter from the Right Hon. W. Cowper, dated 30th January last, provided he will obtain the sanction of Parliament for transferring to this Board, for the purpose of effecting public improvements within the metropolis, the income arising from Hackney cabs and omnibuses, collected within the metropolitan area.

Mr. ECKETT seconded the amendment, which was lost.

The motion of Mr. ROCHE was then agreed to.

Mr. ROCHE moved—

That Mr. Cowper be informed that the matter had been referred to a committee for consideration, and that he be requested to forward to the Board, as early as possible, the plans and estimates, which were understood to be then in course of preparation.

This motion was seconded and agreed to.

Mr. FRANCIS BEDFORD has been appointed to accompany his Royal Highness the Prince of Wales in his tour through the East, for the purpose of taking photographic views of the landscapes, figures, and architecture of the various remarkable places that may be visited.

AN ARCHITECT OUT OF PLACE.

IT is very seldom, we are glad to say, that an architect figures prominently in any of our criminal courts. The gentleman who played so conspicuous a part in a recent trial before the Common Serjeant deserves, consequently, a passing notice at our hands. It is true he appeared as prosecutor in the case, but the unanimous opinion of all who heard his cross-examination, or who read even the abridged report of it in the newspapers, undoubtedly was that he occupied a wrong position, and a position which it may be said very positively architects do not usually occupy. An "architect" (we have called him an architect, because he so styled himself), one Mr. Brown, indicted a carpenter in his employment, who had formerly been his petitioning creditor, for stealing a quantity of yellow battens. The evidence adduced was curious, for we all know that it is very unusual, and, in fact, contrary to all respectable practice, for an architect to furnish the materials of a building, and to claim the ownership of any such which may be missing from the works, or which had not, "to his knowledge," been delivered. Even the "continual laugh" and "great flippancy" with which the prosecutor answered the prisoner's counsel, did not gild the features elicited in cross-examination. They told us very plainly what an architect should not be. He had been engaged in a great many building speculations.

Further light was thrown on Mr. Thomas Thury Johnson Brown's professional practices by the questions of the opposing counsel. By his orders some of the men had broken open the prisoner's desk. He had reinstated men who had been discharged by the superintendent of the works. He had brought actions against Mr. Bosanquet (the Treasurer of the Association for the Improvements of the Dwellings of the Poor, for whom the building was being erected), for conspiring with others to charge him, the "architect," with forgery.

We have strung these pearls together neither for their beauty nor their rarity, but because they possess a certain negative value in showing what an architect is not. Mr. Brown, spite of his conveniently defective memory, has revealed himself in very positive colors. The whole profession does not, we believe, contain another such original. None but himself can be his parallel. A leopard might pass for a lamb, and a negress for the "lily maid of Astolat," but that Mr. Brown could ever be employed by educated gentlemen as an architect, and as observant of the usages of a liberal profession, excites our surprise. Nearly everything, in fact, which he professes to have done to the building, whence this trial sprang, is foreign to the practice of architects. They neither pay the men nor buy the materials. They neither engage nor discharge the workmen, nor do they receive their visits on a Sunday. An architect could not by any possibility, without losing the respect of his class through over-stepping the limits of his vocation, be the prosecutor in such a case as that upon which we now comment. The ordinary training of the profession at least preserves its members from such pitfalls, and it is well to remember this when a gentleman of some distinction has asked before a "Society of Arts" what an architect is. He pointed out what can be accomplished without regular education, and without "professional trammels." We will make him a present of this case to back his future arguments. He has a specimen at South Kensington of the art which can be got without them; he may now have a sample from the Central Criminal Court of the morality found outside them. Scylla and Charybdis naturally are reflected in the same strait. If an employer avoid the one, he is likely to be imperilled with the other. If he wants his work well done, artistically and morally, he had better sail in other waters, and steer his ship where men of cultivated taste, of common sense, and ordinary prudence are content to go.

If an architect of less extensive general experience than Mr. Brown, but with a conscientious regard for the duties and the honor of his calling, had been consulted and engaged, the Association for the Improvement of the Dwellings of the Poor would not have had their building now at a standstill; a respectable builder would have had the contract, and the work would have been satisfactorily done. We now find no mention of a builder in the case. He, seemingly, for some unexplained reason, was deemed useless, and the so-called architect and the workmen ran confusedly together. We more than half suspect that some foolish miscalculations have laid at the root of the business. An "architect and speculating builder" may have been just the man to know how to do the thing cheaply. The knowledge of many things economically concentrated in one vessel was spoilt, however, by the pot which contained it, and the old proverb of "cheap and nasty" found another apt illustration. We are sorry for the Society, which must suffer by this transaction; but societies, however philanthropic, are no more exempted than men from the consequences of folly. If they sow thistles they must expect to reap them. This Association began its building on a novel principle, and it has an exceptional result. We have some pity for the employers in this case, because we believe they meant well towards the poor for whom they had to provide; but we shall have none for any one who, with this example before their eyes, goes and does likewise.

Mr. T. Thury Johnson may relapse into either of the many vocations of his chequered and eventful career, but the account of his own life which oozed through his guarded and smiling lips in the witness-box of the Central Criminal Court, will not be without service if it establishes in the minds of all men entering the profession the conviction that such attainments as he acknowledged, grafted even upon an architectural education, bears but Dead Sea apples, and that it is only by honorable conduct, upright actions, and level steps, that we can do our duty to ourselves, our employers, and our profession.

BARRACK BUILDING.

Maidstone.—We hear that the difficulties in connexion with the enlargement of the Maidstone cavalry depot have now been entirely removed, and it is understood that the estimates will be brought before the Government forthwith. It is proposed to extend the barracks as far as Wharf-lane, necessitating the removal of the whole of the houses on the side nearest the garrison; a road, however, being still reserved down to the river. The Grasshopper Inn, and the adjoining houses facing the Sandling-road, as far as the above lane, will also be taken down; and as the front boundary will be in a line with the present railings, an ugly angle, as well as some very unsightly buildings, will be removed, and the road at this spot very considerably widened and improved. The plans for the new barracks propose to furnish accommodation for about 800 men and 500 horses. The quarters for the commandant, staff, and other officers, with the mess-room, &c., will be erected on the site of the present wooden buildings, with a considerable extension on the south side, the whole forming a range of buildings 600 feet in length. At right angles with this range, on either side, running down towards the exercising field, the soldiers' quarters will be erected, forming two very large blocks of buildings, each three stories high. Separate provision is to be made for the married soldiers. The stables will be erected in the rear of the soldiers' quarters, and a second riding-school will be built, exactly similar to that now nearly completed, which is covered with a light iron roof, 50 feet in the clear. The hospital will be enlarged to double its present size, and nearly an acre of ground will be thrown into the exercising field. It is proposed that the main entrance should remain at the same spot as heretofore, but a second entrance will be formed, leading from Wharf-lane. The new barracks will be erected of brick, with cut stone dressings. The expense of carrying out the whole of the work is estimated at about £30,000.

Colchester.—Government has accepted the tender of Messrs. Lucas Brothers for the erection of the new Cavalry Barracks in extension of Colchester Camp. The original estimate was £52,000, and the amount of the contract is understood to be £49,700. Eight firms tendered for the works, which are to be completed within 12 months, although it was at one time contemplated to extend them over 21 months. The foundations are to be completed before the close of the month of March, and an extensive system of main and lateral drainage will be carried out. The barracks, which are for a regiment of cavalry on the home strength, are, as lately stated in our pages, to be formed in blocks, affording accommodation for about 72 men each, and will be built of red brick, two stories high, except the officers' quarters, which are to be of three stories. The site of the erections will be the extensive grounds of the Abbey Farm, purchased about two years since by Government. Although these works will exhaust the Parliamentary grant made during the last Session, it is understood that further sums will be asked for in order to carry out the entire plan, which embraces accommodation for two or three batteries of artillery and a strong body of Royal Engineers. This scheme will bring together the various branches of the service, and make Colchester the principal military station of the eastern district of England.

Gravesend.—The barrack buildings now in course of erection at Gravesend for the accommodation of the officers and men sent to that station from the garrison at Chatham, will be completed and ready for occupation during the approaching summer. The additional buildings include a building behind the present block, running to nearly 200 feet long, 24 feet wide and 12 feet high. Adjoining this building is placed another block of houses for the officers' servants, accommodation being provided for 32 men. In addition to the several blocks of buildings already completed, a guardhouse is now in hand, together with quarters for the staff, mess-rooms for the officers and non-commissioned officers, and the usual offices. There are also buildings to be used as cook-house, commissariat store-rooms, reading-rooms, lavatories, and hospital. The buildings are erected of light colored brick, with quoins in red brick. The plan of ventilation adopted was suggested by the Army Sanitary Commissioners. The rifle range at which the troops will be instructed is situated some distance from the barracks, in a secluded part of the outskirts of the town.

PROGRESS OF THE METROPOLITAN MAIN DRAINAGE WORKS.

At the last meeting of the Metropolitan Board of Works, Mr. BAZALGETTE, the Engineer-in-Chief, in his monthly report on the progress of the Main Drainage Works, stated that in the Northern Outfall sewer contract Mr. Furness had made good progress during the past month. The ironwork for the river Lee aqueduct was upon the ground, and the girders were fixed. The subways for the East London Waterworks, and the suspension of the supply mains, had been nearly completed, without accident, and the cutting through the embankment of the Eastern Counties Railway, 24 feet deep, had been made without interruption to the traffic. The foundation works for the New Stratford-road, and the concrete foundation along the line of sewer towards East Ham, were considerably advanced. As to the three lines of intercepting sewers in course of formation between the Bow and Barking railway and East Ham, sixty of the arches, each of 18 feet span, which will carry the intercepting sewers across the marsh lands, were completed. The materials supplied were abundant and of good quality. The value of the work done was about £185,000. In the Middle-level sewer, Messrs. Brassey and Co. had constructed about 21,400 feet of sewer, varying in size from 3 feet in diameter to 9 feet 6 inches by 12 feet, at an expenditure of about £96,400. These works were for a time retarded by an accident to a cofferdam, whilst constructing the sewer underneath the Regent's canal, by which the water escaped into the sewer and emptied the basin of the canal, but it was again opened in two days, and no further mischief was done. Precautions had since been taken to prevent the possibility of a recurrence of such an accident in this difficult portion of the work. The completing works of the Ranelagh Storm Overflow were in a very confined space in the Uxbridge-road, and progressed slowly. The value of the work done was £26,900. The Southern High-level sewer progressed very slowly, and the works were subject to frequent stoppages, owing mainly to misunderstandings between the contractors and their work people. About 7½ miles of sewer were now contracted, valued at about £144,000. Mr. Webster continued to progress satisfactorily with the Southern Outfall sewer contract, which will, to all appearance, be completed early in the spring, and before the time named in the contract. He had then constructed about 6½ miles of sewer, at an expenditure of about £263,000. At the Deptford Pumping station Messrs. Aird and Son had brought up the foundations of both engine-houses to

the ground level. They had constructed 484 feet of the double line of Low-level sewer near to and below Deptford Creek, and had laid 3,648 feet of cast-iron pipe, 3 feet 6 inches in diameter, from the High-level sewer under Deptford Creek to the Pumping station, and driven piles for about 150 feet to the wharfing. The value of the work executed by them was about £57,000. Mr. Pearson had commenced his contract at Dulwich; and Mr. Dowds had constructed 332 feet of the Southwark subway, 335 feet of sewer, and 70 vaults, at a cost of £3,600.

DOORWAY AT KHOSH DINISSAR, MESOPOTAMIA.

WE this week engrave a view of the doorway of a mosque at Khosh-Dinissar, in the Mesopotamian Desert. The village in which it is situated is composed of a few mud huts, inhabited by cultivating Kurds, and lies some six or seven days' journey east of Aleppo, and a few miles south-west of Nisibin—the ancient Nisibis. The only object of architectural interest in the place is the mosque, which is very fine in its detail. It was built by Melek Mensur ibn Mahummad Thahar. Like everything else in Turkey, it has fallen into ruins, although it is still used as the village mosque, and guarded, consequently, with jealous eyes from profane intrusion. To the fortunate circumstance of our artist travelling in the company of a tribe of the Shammar, who divide the honor with the Anneyzee of being most dreaded for their foraging exploits, he was enabled to enter the sacred precincts and sketch at his leisure.

The building is a parallelogram, with a dome in the centre, occupying the whole width of the mosque. The doorway, which we have engraved, is in the middle of one of the longest sides. On either side of it are four niches, with pointed arches. They, like the doorway, have blocks of black basalt introduced in bands, resembling in that particular the early architecture of North Italy. A mutilated Arabic inscription formerly filled the tympanum of the arch. On entering, we find ourselves immediately under the dome, which has fallen in, but the corbelled springings of it remain. They are all different, and of beautiful design. Right and left of us, as we enter, run four bays of nave and aisles, separated by colonnades. Immediately in front of the entrance, the Kebab, which marks—or is supposed to mark—the direction of Mecca, is situated, and before it the faithful, at the stated hours, perform their genuflections and say their prayers. The Kebab is one mass of carved and interlaced work, designed with great taste and rich inventive power, and wrought with remarkable delicacy and finish. A modern wooden pulpit is fixed beside it. The whole building has a mournful look—dirty and dilapidated; but enough remains to show the style of art which once flourished, where now the plundering but artless Bedouen have undisputed sway.

THE HOSPITALS OF PARIS AND LONDON.

THE debate at the Imperial Academy of Medicine, on the relative advantages of the London hospitals compared with that of Paris,* still continues, its latest incident being a letter from M. Husson, director of the Assistance Public, of Paris, who expresses himself as follows:—

A large portion of the hospital of Glasgow has just been rebuilt on an improved plan, and in London the hospital of King's College has received an addition of two or three new wards, which, in truth, are rather large, but are by no means favorably arranged. Now, it is these improvements on which the whole debate is made to rest. The hospitals of London only contain 3,700 beds for a population which is double that of Paris. The hospitals of the latter city contain 7,000 beds, without counting the beds of the sick wards in the hospices; we have, therefore, to provide for greater wants under more difficult circumstances. Most of our hospitals are situated on high grounds or in the midst of plantations free from houses, as is the case with Beaumont, Lariboisière, St. Antoine, La Pitié, Cochin, the Enfants-Malades, and Necker. Nothing of the kind exists in London. With the exception of a single hospital situated near Hyde-park, all the hospitals of the city are built in the midst of populous districts, and in narrow streets. They have generally neither gardens nor courts, and the sick wards receive light from one side only, which is a great defect. There are even dissecting-rooms in several of the hospitals. Now these are the establishments which are compared to ours! It is true that the wards of these imperfect hospitals in general contain fewer patients than ours. The English like to leave large open spaces in their wards; but, by an illogical arrangement, they pack the beds closer together. There is no bad smell in the hospitals of London, although there is no artificial ventilation; and this advantage, with few exceptions, we certainly do not enjoy at Paris. But in London they open the windows during the doctor's visit, and several times a day, which explains the absence of smells. The English beds are much more simply constructed than ours, which are too complicated. There are no curtains to the English beds. The wards are warmed by fire-places, but it is a mistake to believe them sufficient to ventilate the wards, or to suppose that they can replace a well-arranged artificial ventilation.

DRESSING SLATES.—It is said that Mr. J. W. Greaves, of Port Madox, has patented an improved apparatus for dressing slates, whereby accommodation is afforded for two workmen at the same machine. The knives, or cutters, are mounted at a slight angle to the axial centre line of the machine upon a pair of holding discs. The cutting edges of the knives are in opposite directions, so that by imparting a circular reciprocating motion to the discs, the knives will alternately act upon and dress the edges of the slates, which are presented to them upon stationary cutters or knives at each side of the machine. The reciprocating motion of the discs and their knives may be derived from a revolving crank driven by a pulley and band, and acting upon a lever arm fastened on the main shaft, or by any other convenient mechanical arrangement. The different sizes of the slate are gauged by suitable gauges on each side of the machine.

PARIS.—The repairing of churches in Paris is being continued with great activity. The statues sculptured for the three niches in the church of St. Louis and St. Paul, in the Rue St. Antoine, at the junction with the Rue de Rivoli, have been put up. The statue of St. Louis, by M. Lequesne, is placed in the upper niche. A St. Anne, by M. Etex, is placed on the right, and a St. Catherine, by Auguste Préault, on the left. The church of St. Louis and St. Paul, of which the foundation was laid in 1627, was not completed until 1641.

* See page 33 ante.

SOCIETY OF FEMALE ARTISTS.*

THE landscape painters of this society now claim our attention. "Roslyn Chapel," by Miss Louise Rayner, is the most commanding, masculine and elaborate picture of the kind in the present exhibition. The colors are impasted with a boldness and character unusual from a female hand, but this lady possesses an energy in the execution of her subjects which shows her to be a thoroughly accomplished artist. In this picturesque interior, so often painted, but seldom excelled, there is a management highly creditable to her knowledge. The figure of the female drawing is admirably placed; and there is an excellent quality of color in the gradations and variety of tints with which the pavement is represented. The water-color drawings, by the same lady, of "West Bow Church, Edinburgh," and the "Head of the West Bow Church," in the same city, are really powerful, vigorous, and fine. Mrs. T. J. Thompson exhibits two landscapes, in both of which there is an elaborate attempt at rendering the luminous effect of daylight; but over anxiety to succeed has defeated the intention, for more middle tint of a cool color and less density in the shades, allowing room for more reflected light from the ground, would have brought her nearer to success. Mrs. Hemming treats her little subject with much taste and delicacy. "Grande Malines," and "Our Boarding House at Boulogne," are pleasing examples of her style. Mrs. Hussey, on the contrary, takes a dark view of nature, and although we have no objection to a peculiarity of tone when it tends to a poetic result, we do not discover in "Cottages at Studham, Dorset" that anything is gained to warrant the sacrifice of ordinary daylight.

"Rydal Water, Westmoreland," "On the Stock Gill River," "Bolton-le-Sands, Lancashire," and a "View in Wales," are very pleasing contributions by Mrs. W. Oliver. There is some clever execution in Miss G. Swift's "Shrimpers waiting for the Tide," and we observed a good family likeness in Miss C. F. Williams's "Morning on the Thames" to the numerous productions on canvas which catalogues class under the same name. "The Bass Rock, Frith of Forth—Approaching Storm," by Mrs. Dundas Murray, is treated with considerable skill and effect; we prefer it to her other picture, entitled "Grève de Leq, Jersey," because the sides of the view are better balanced by objects of interest. We know that the practice of many great masters is against our objection, but we always feel that when there is shore on one side of the scene and nothing but sea on the other, it looks more like half a picture than a whole one, unless great ability is exercised either in focussing the light or by the introduction of something which shall, apparently or really, produce the effect of a counterpoise. "Rock in Jersey," by Mrs. J. W. Bower, shows some courage, as it is treated in a decidedly Turner-esque feeling, and with good result. We should be happy to see her example more influential among our landscape painters, whether male or female. "Ante-Collegio in the Ducal Palace, Venice," by Madame de Feyl, is a highly-finished and an interesting production. "The View from Worcester Bridge" is an important drawing by Miss S. Wilkes. It has all the excellent qualities required in such a work. The water is flat, the distance retires well, there is great breadth of general treatment, and the whole thrown into air by the sharp and decisive manner in which the boats are touched. We admire the general treatment of "Ruins of St. Peter's, Chelmsford," by Miss Severn. "The Border Peel Tower—Moonlight," is highly creditable to the taste and execution of Miss Lucy Archer. Miss Isabella J. E. Jones is happy in her manner of coloring the old buildings in the "View of Monk's House, Gloucester," and "On the South Coast, near Hastings," by Mrs. Willis, is very freely pencilled and breezy in effect.

Of fruit and flower pieces, including "Still Life," there is not that numerous supply which might be expected in an exhibition of female artists. Miss Florence Peel is the leader in this branch of art; her "Azaleas" are painted with considerable feeling and power, but we confess our inability to discover her intention in the picture entitled "A Study of Color." It certainly is not a study suggested by the spectrum, and the result is, whatever the intention may have been, to show that a band of deep, rich, and powerful red around a mass of white and delicately tinted flowers will rebel against what may be considered the regular arrangement, overpower the centre group, turn the convex into the concave, and harmonise with no other part of the composition; against such odds it is useless to attempt a focus of light, and we noticed a piece of bank very unpleasant to the eye. "Goldfinches and Flowers," by Miss Emma Walker, shows great ability in closely copying the objects represented. The goldfinches are admirably painted, but they both possess so equal a prominence and individual distinctness that they might change places without the slightest change in the colors or in the effect; they therefore group badly, or, rather, not at all, and a great deal of really good execution is not only wasted, but actually employed to the detriment of the subject. A knowledge of *chiaroscuro* enables this lady to save her labor, and to produce a picture in the proper sense of the term, instead of a number of isolated studies on one sheet of paper.

Similar objections may be raised against an elaborate drawing, by Mrs. Withers, of "A Study of Garden Rock-work, with Robin and Nest." There is in this a great deal of labor bestowed on unworthy objects, to the injury of the whole. For instance, there is an unpleasant restlessness created by the endless repetitions of the peculiar forms of the leaves; and in copying a fragment of a flint the artist has lost sight of the substance in her effort to render the color. Now, this is a subject which, with more painter-like feeling in the treatment, might have been suggestive of a pleasing sentiment. A female bird sitting on her nest always excites an interest, and if the sparkling anxiety of her eye directed to the spectator had been made

the bright point in her little shady retreat, and the male bird, instead of standing out in unmeaning obtrusiveness, had been thrown into tone and mass with the surrounding accessories, a truly poetical result might have been obtained. From the hard and unflinching style of drawing and coloring in some strawberries on a cabbage leaf, this lady has evidently never heard of Titian's Bunch of Grapes. We must not forget to mention the ducks and geese, although certainly out of place, among "Still Life," by Madame Juliette Peyrol (*née Bonheur*), for the admirable style in which they are painted. There are a few miniatures on the screens, displaying a nice talent for that minute branch of art. Sculpture, by Mrs. Thornycroft, a whole-length model of the Princess Beatrice, from the Royal Academy, by no means so elegant as to warrant a second exhibition, and by Naomi Burrell, is distributed about the room, and a few animals in bronze after Rosa Bonheur.

INSTITUTION OF ENGINEERS IN SCOTLAND.

AT the conclusion of the paper on Wood-Planing Machinery (given in our last Number), the following discussion took place:—

Mr. J. BROWNLEE said that the earliest successful application of revolving cutters for dressing wood was by Mr. Bramah, who in 1802 patented a machine which is to some extent still used. In that machine the timber was passed beneath a horizontal wheel or face plate carrying gouges or knives, and running upon a vertical spindle with considerable velocity. It was not, however, until about the year 1827 that a machine was brought into practical use for the working of flooring boards, which was patented by Mr. Malcolm Muir, of this city; and, as Mr. Norton had said, the boards in Muir's machine were drawn over fixed plane-irons by an endless chain, the tongue and groove being at the same time formed by small circular saws running upon five different spindles; but, with the exception of a narrow strip along the edges, this machine did not operate upon the back of the board, nor otherwise reduce it to an equal thickness. In the year following (1828) another machine, of an entirely different character, was patented by Mr. Woodworth in the United States of America, where it was now extensively used, and so generally preferred as almost to have superseded all other methods, especially since the expiry of the patent, which, by two renewals, continued in force for a period of twenty-eight years, and, therefore, only expired in 1856. In the Woodworth machine the boards were fed by rollers. No stationary plane-irons being used, the boards were dressed smooth at the upper side and at the same time reduced to an equal thickness by knives fastened to arms (as represented by Mr. Norman), or to a block mounted upon a horizontal spindle which rotated with great rapidity. The tongue and groove were similarly formed by rotating cutters mounted upon two vertical spindles, one cutter head operating upon each edge of the board. The whole operation of facing, thicknessing, and tonguing and grooving, was thus performed by rotating cutters mounted upon three different spindles. About the year 1831 the rotating thicknesser of Woodworth—that is, the dibber or souter as described by Mr. Norman—was re-invented or imported and patented by Mr. Muir, up to which time the work produced by Muir's machine was very incomplete. Some time previous to the expiry of Mr. Muir's second patent, a machine was constructed and put in operation in this city by Mr. John Robb, in which he applied the feeding rollers and tonguing and grooving cutters of Woodworth; and being under the necessity of ending Mr. Muir's patent, he substituted for the rotatory dibber of Woodworth the revolving wheel of Bramah. Other machines, in which similar means were adopted, were about the same period made by Messrs. Norman and Clinksill, and by Mr. Thompson of Edinburgh. On the expiry of Mr. Muir's patent, the feed rollers, tonguing and grooving cutter, and dibber of Woodworth came into general use. The chief makers of those machines were Messrs. Norman and Clinksill, and the late Mr. McDowall of Johnstone, by whom many excellent machines were made and great improvements were effected. The modern machine, although scarcely presenting in its external appearance any resemblance to those originally invented by either Muir or Woodworth, was essentially a combination of both. For finishing the face of the board, the stationary planes, as introduced by Muir, were still retained, while the tonguing and grooving cutters—the thicknesser or dibber, and the feed rollers—operated precisely in the same manner as patented by Woodworth in 1828. The machine had undergone many modifications in the hands of different makers, but these modifications referred only to matters of detail and arrangement, the operating principle being the same in all. In the earlier machines proper attention was not bestowed upon the perfectly balancing of the different rotating parts of the machine, which was of first importance, and required not only great care on the part of the maker of the machine, but also upon that of the operator, who required to notice that the knives which he fastened upon opposite sides of the rotating block were always perfectly equal in weight. Negligence in this respect rendered it impossible to make good work with any machine. The necessity of this observance was, however, now generally understood. It was not, however, so well known that it was almost equally necessary that the belts by which the rotating cutters were driven should be as nearly as possible of equal weight throughout, without any clumsy or heavy joinings. Belts running at a moderate speed were sometimes joined by copper rivets, but this method of joining belts which run at high velocities was quite unsuitable, as the weight of the rivets not only communicated a vibratory motion to the machine, but also very soon destroyed the belt itself. After properly balancing the various rotating parts of the machine, the chief improvements which had been effected referred to the method of forming and fastening the cutters so as to facilitate the changes which were required for the various kinds of work, also to the means of adapting the machine to the various thicknesses of material, and in the methods of arranging the gearing, by which the feed rollers were driven, so as to accommodate itself to the different positions of the upper rollers, which rested upon the work, and rose and fell as the thickness varied. In the machine before them the rollers were driven, as would be observed from the drawing, by bevil wheels, the wheels which geared into those which were fixed upon the upper rollers slid upon the upright shafts, being supported by the ends of the shafts of those rollers, which ends projected into a groove cut out round the boss of the wheels sliding upon the upright shafts; and these wheels were thus held always in the same position with respect to the upper rollers, along with which they rose and fell. Although many machines had been constructed in this manner, he did not think the method commendable. The wheels which drove the rollers were by this arrangement limited to the same diameter as the rollers, which not only rendered the teeth liable to fracture from the strain they had to bear, but, from the smallness of the wheels, an extra pressure was also brought upon the journals and bearings of the rollers. The bosses of the wheels which slid upon the upright shafts were also liable to wear, and become loose and shaky. The grooves in the bosses of those wheels, and the ends of the roller shafts which turned in those grooves, and by which the wheels were supported, were no less objectionable. In a machine for working mouldings made for him some years since by Messrs. Forrest and Barr, and also in a flooring machine which he had more recently had made, the wheels upon the roller shafts were much larger in diameter than the rollers. In a line nearly horizontal with the rollers, a shaft extended across the machine between each pair of rollers, which shaft carried a pinion which drove two rollers—a roller wheel gearing into each side of the pinion. When the upper rollers rose or fell, the depth which the teeth of the wheel and pinion geared into each other varied slightly; but as the extreme thickness of wood which passed through the machine seldom exceeded 4 inches, the rollers were not required to rise or fall more than 2 inches above or below the level of the intermediate shaft, and this did not appreciably affect the proper action of the teeth. Within the last twenty-five years he had had in his works in this country and in America eight planing machines, no two of which were constructed alike; but he conceived this mode of driving the rollers to be the most simple and substantial which he had tried or seen. He had placed a number of samples of mouldings upon the table, worked by the machine made for him by Forrest and Barr, which had not been sand-papered, but were in the same state as on leaving the machine, and he thought they would be admitted to be as smooth as if dressed with the finest plane.

Mr. J. RUSSELL said the difference between the planing machines now in use lay chiefly in the gearing of the rollers; and he thought they ought to inquire whether the bevil or spur gearing—as pointed out by Mr. Brownlee—was the best. It appeared to him that the bevil gearing was correct in action, whatever might be the position of the upper roller. With the spur gearing the action was not absolutely correct, but yet it might be sufficiently so for all practical purposes; whilst if the bevil gearing were apt to give way on account of the small size to which it was limited, that would go far to condemn it. They had been told that the machine had worked well, and he would like to know whether the bevil wheels were, in practice, found liable to break. In the event of parties requiring a machine of this kind, it would be well if they could get some information about this—the only point of difference between the various machines. Any practical person who looked at the original machine of Mr. Muir, and compared it with the present machine, would observe that there were, perhaps, very few machines upon which so many improvements had been made. He happened to be at the making of one of the earlier machines at Leith, about the year 1832; and when it was started there was scarcely ever a day passed that a belt did not break. There was a drum and a considerable number of belts in use, and some of them were continually breaking. The pitch chains with the hooks split away the wood at the ends, and detention from that cause was common. In looking at the two machines, great improvements appeared to have been made upon the original one.

Mr. T. DAVISON asked how many adjustments were required in altering the machine to cut from one thickness and breadth to another thickness and breadth.

Mr. BROWNLEE said that to alter the machine to cut a different breadth of board only required the turning of a wheel, every turn giving an eighth of an inch; but in altering the thickness all the tonguelug and grooving cutters had to be changed. The thickness of the board could be elevated, as well as other holding-down rollers or dibber and feed rollers had also to be elevated. The machine had, however, been greatly improved in this respect, by so combining several of the parts that they rose and fell together. In some machines the feed rollers were elevated singly, whilst by various arrangements in others they all rose together by simply turning a wheel or handle. Both of the machines mentioned which he had last had made were so constructed; but in each machine this was effected by a different method, the arrangement by which this was effected in the last having been designed by the makers, Messrs. Smith Brothers and Co. But besides the feed rollers, there were others for pressing the board down upon the plane bed; and those rollers, as far as he was aware, had always been raised separately; whereas, in his last machine, he caused them to be supported in a frame, which frame was itself carried by the four bushes of the adjoining feed rollers, along with which it rose and fell, and thereby those rollers rose and fell along with the feeding rollers. By this arrangement not only was time economised, but an invulnerable pressure was also brought upon the back of the board, which was otherwise ever changing with inequality of thickness when those rollers were held down by springs, as was usually the case.

At the fourth meeting of the Session held on the 22nd January, the PRESIDENT in the chair, the SECRETARY read the following communication which had been addressed to the Council of the Institution:

"A great desire having been expressed by many members of the various learned and scientific societies in Glasgow, to make some efforts to obtain better and more suitable accommodation for their valuable and increasing libraries and other property, and for their meetings and business rooms, a preliminary meeting was held on the afternoon of the 31st December, in the Andersonian Library, by a few gentlemen connected with the Philosophical Society, Institution of Engineers, Architects, Archeological, and Geological Societies, for the purpose of taking steps to obtain the formal concurrence of all the societies to this movement. After fully talking over the matter, which met with warm approbation, a small committee was formed to bring before your society and others the following suggestions, and, if meeting acceptance, to request that you will appoint a committee of three of your number at your first meeting, to form a joint committee, for the purpose of carrying out, in this matter, the wishes of the different societies."

Among the suggestions were the following—
That all the learned and scientific societies of Glasgow be brought together into one building, to be built in some suitable situation, and to be named "The Royal Institution Buildings," with a Royal Charter.

The societies only to be so far united as to carry out the desired object of mutual accommodation and assistance at the least joint expense.

Each society will retain and maintain its own library and other property, with its own distinct management and funds, as at present.

All the libraries to be kept together in one library hall or reading-room, under the principal librarian, with assistants—the library-room to be fitted with every comfort and convenience for consulting, reading, and writing.

A large hall for general meetings to be provided, and such smaller rooms as each society may require.

A general museum for the reception of models and drawings—mechanical, architectural, or otherwise—and geological and archeological collections.

It is intended to raise a sum of money to carry out these objects by donations. It is believed there are amongst the wealthy citizens of Glasgow a sufficient number of gentlemen who will appreciate the motives with which the appeal will be made to them, and by their liberality enable their fellow-citizens who walk in the honorable but less lucrative paths of learning and science, to raise a building that will not only be an ornament, but a monument, to show that there is a taste and a desire amongst our merchant princes above that of merely making money.

On the recommendation of the Council, Mr. Johnstone, President, and Messrs. A. McOnie and R. Bruce Bell, members of Council, were unanimously appointed to represent the Institution, and co-operate with deputations from other societies, in promoting the objects referred to in the circular.

Cordale's sheet-metal splitting machine was then exhibited, and described by the SECRETARY, who explained that the improvement comprised in it were provisions for dividing a sheet into two or more parallel strips at once, and contrivances permitting of the easy adjustment of the parts for cutting different widths. The cutters consisted of square-edged steel rings mounted upon two parallel shafts, and working slightly past each other—the rotation of the shafts causing the cutting rings to draw the sheet through whilst cutting it. The machine, which was of very small size, was shown in action cutting sheet iron, of about 18 wire gauge, into three strips at once—the strips being delivered with square, clean-cut edges, and without twist.

ON THE INDURATION OF STONE.*

THE destructive influences at work in great cities upon stone are rather complex. But many buildings in country districts where the air is pure, and reveals to chemical analysis nothing but its normal ingredients, suffer greatly from decay; such decay, however, is nothing more than the "weathering" to which the particular kinds of stone in their natural mode of occurrence in rocks and hills would have been subject. Of the natural agents of destruction water and carbonic acid are those, the influence of which is exerted also upon the stones of buildings; for we may dismiss from consideration, in the present case, the sure but slow process of disintegration effected in stone by mosses and lichens, and the higher forms of vegetation; and also the more rapid destruction caused by wind and tempest. Water, as a destructive agent, acts not only chemically, but mechanically; it actually wears away by friction certain particles of stone, at the same time that it exerts its solvent action upon other particles, and upon the cementing material which binds them together. The more porous the stone, the more rapid is this action; for compact crystals of carbonate of lime, &c., offer a very small surface to this destructive influence of water, compared with that offered by a mass of minute particles separated from one another by an infinitude of open spaces. Even where the compact crystals of carbonate of lime, sulphate of lime, carbonate of magnesia, or even silica occur, they are often united together by a cement which, from its non-continuity, is easily acted on by water, disintegration of the stone following as the result. But it may be asked, how can the atmospheric water dissolve this cementing material, seeing that, if it were carbonate of lime, each grain would require 11,000 grains of water for complete solution? Had, indeed, this cementing material no other agency to contend against save that of pure water, its permanent stability need not be doubted. But, unfortunately, rain water is not pure water; it invariably contains a certain quantity of dissolved carbonic acid gas, as well as traces of nitrate and carbonate of ammonia, and, occasionally, of free nitric acid. Of these materials it is, however, the carbonic acid whose action is most pronounced. This gas, of which 100 volumes of water, at the ordinary temperature and pressure, are capable of taking up 100 volumes, dissolves the carbonates of lime, baryta, strontia, and magnesia with great ease; one part of carbonate of lime, requiring not 11,000, but only 800 of water saturated with carbonic acid, at the ordinary temperature and pressure, for solution. And their action, it must be remembered, takes place not only when rain is actually falling, but also in a lesser degree at many other times, since the air in England contains, on the average, in 10,000 volumes, 150 volumes of watery vapor, and four volumes of carbonic acid gas. Rain water often holds in solution several volumes of carbonic acid in 100 volumes of water, and is capable of retaining 100. But rain water collected, in, or near, large towns, contains several additional impurities, such as sulphate of ammonia, organic and carbonaceous matters, traces of fixed inorganic salts, and occasionally sulphurous, sulphuric, hydrochloric and hydro-sulphuric acids. Of these bodies sulphurous and sulphuric acid are more especially injurious, and their occurrence in the air of large towns complicates the destructive work going on in the buildings. Disregarding those curious and happily exceptional cases, where, from local and special causes, a considerable formation of the nitrates of lime or magnesia—extremely soluble salts—has taken place in stone to its serious damage, I would refer briefly to the extensive injuries suffered by buildings in consequence of the action of sulphurous and sulphuric acids upon them. Both these acids change the carbonate of lime or magnesia of the stone finally into sulphate of lime, or magnesia—the former a salt which is just two and twenty times more soluble in water than the original compound. Not only does this greater solubility of the sulphate of lime make it more open to attack, but the very transformation from carbonate to sulphate of lime causes a looser re-arrangement of the particles, and so favors disintegration. But though one part of sulphate of lime requires rather less than 500 parts of water for solution—a small proportion of solvent compared with that required by carbonate of lime (11,000 to 1)—yet sulphate of magnesia, into which the carbonate of magnesia contained in many building stones would be transformed by a process identical with that last mentioned, is an extremely soluble salt. There are other cementing materials in addition to sulphate of lime and the carbonates of lime and magnesia, which are less liable to injury from atmospheric influences. The chief of these are silica, silicate of lime, silicate of alumina, and per-oxide of iron.

The effects of the several destructive agents to which I have just referred may be traced in the change of appearance and composition, suffered by the decaying stone. Water and carbonic acid wear away the cementing material, and the softer layers and veins of the stone, causing disintegration and flaking off; while sulphurous and sulphuric acids aid this action by changing less soluble into more soluble salts, and by re-arranging the changed molecules into a less compact and more friable form. Chemical analysis discloses this latter change in a very interesting manner. Specimens of stone which, when freshly quarried, contained a mere trace of sulphate of lime, show, after a single year's exposure to the London atmosphere, a notable quantity of that salt; and this proportion often goes on increasing from year to year, being formed more rapidly than it is removed by the solvent action of rain water. In a magnesian limestone sulphate of magnesia is likewise produced; and in such quantities that, by the disruptive force of its crystallisation and subsequent efflorescence upon the surface of the stone, small particles of the material are torn off and fall away. This action closely resembles that caused by the absorbed water of the stone at the moment of its freezing. When we consider the vast bulks of air which in passing are continually bringing their influences to bear upon the exterior of a building, we need not be surprised that a marked effect should be experienced from the presence of so small a proportion as from 20 to 30 parts of sulphurous and sulphuric acids in 100,000 parts of air. In decaying stones two peculiarities are generally noticeable. The decay is often greater under mouldings, cornices, capitals, and other projecting parts of the buildings, than in more exposed situations; also, while one portion of a stone may remain sound, another portion will rapidly soften and fall to powder. This latter effect seems due, not to any difference in the chemical composition of the several parts of the pieces of stone, but rather to differences in the state of aggregation of its particles. In the former case the comparative immunity from decay of certain exposed portions of a building appears to arise from the heat and air drying up and evaporating the corrosive solution which falls upon them, while this liquid is retained longer in sheltered corners, and there exerts a more powerful and more enduring effect.

II. From what I have already said, it will be seen that in order to prevent or remedy decay we have to guard against not only certain chemical, but also certain mechanical actions. There are two general principles, either of which, carried into practice, seems likely to effect this protection more or less completely. Either we may, firstly, prevent all destructive changes by covering up the building in a coating of some unalterable substance; or, secondly, we may so modify the chemical and physical condition of the corrodible surfaces and parts adjacent thereto, as to render stone, previously liable to decay, as enduring as the most impervious rock.

As to the principle involved in the first of those theoretical general plans, it is evidently less advantageous in some respects than that of the second; for we have always to fear the risk of the protective coating, wherever it may be, proving partially imperfect, and so permitting the injurious actions to occur as before, only hid from view. The processes founded upon this principle have likewise another drawback, involving, as they do, an addition to the stone rather than an improvement of it. This addition generally necessitates a change of some kind in the appearance of the stone, whether that change be one of form, color, or texture. The second general principle may, however, as I shall endeavour to show, be carried out successfully into practice without causing these or other defects, and its adoption enable us to fulfil, partially or wholly, the following conditions:—

1. Any process to be thoroughly effectual in preventing or arresting the decay of building stones must be easy of application and moderate in cost.
2. It must render absorbent stone less porous and less permeable by water, and, at the same time, must counteract the influence of injurious bodies in the atmosphere.
3. It must effect the consolidation of stones in which the particles are loosely aggregated, and it must harden stones easily abraded by slight mechanical means.
4. The color and texture of the stone must not be materially altered by the process.
5. The protective material must not constitute a mere film upon the surface, but must penetrate to some depth; nor must it be liable to such contraction of the surface as shall cause a separation of particles from the mass of the stone.

* Read before the Architectural Association, on January 31st, by Mr. A. H. CHURCH, B.A., F.C.S.

PROPOSED WIDENING AND ENLARGEMENT OF THE LONDON AND BLACKWALL RAILWAY.—The plans for the widening and enlargement of this Company's line show that the proposed improvements will commence at Church-lane, Whitechapel, and St. George's-in-the-East, passing over Frederick-street, and terminating at Sarah-place, further extending over Cannon-street-road, running by Cross-street on the east, and Charles-street, and terminating at Little Union-street, St. George's-in-the-East. Additional lands are also to be taken for the accommodation of the increasing goods traffic and in connexion with the various stations, buildings, and the branch line now in course of construction to the London Docks; the cost to be defrayed out of a sum of £300,000, which the Company are already empowered to raise by issue of preference shares.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post*. Gold watches 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enables persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

J. W. BENSON, 33 and 34, Ludgate-hill, 46 and 47, Cornhill, London, E.C. Established 1749.

6. The protective material must be generally less amenable to injurious atmospheric influences, and particularly less soluble in water than the original materials of the stones which it replaces or encloses.

7. No soluble salt, especially no efflorescent or crystallising salt, must remain in the stone as one of the products of the protective process.

These conditions are some of the most important, but they are given here rather as suggestive than exhaustive.

III. We now come to the consideration of the remedial and preventive measures proposed: these I will divide, as before suggested, into two classes; the first including processes where a coating or film of oily, bituminous, waxy, earthy, or other solid matter is applied to the surface of the stone; the second including all those where one or more solutions (the solvents being volatile) are applied in order to produce, by their mutual action or by their action on the stone, an imperishable protection to each particle.

1. I have already stated my conviction that processes belonging to this first division do not, and cannot, fulfil the necessary conditions of success. I shall point out the reasons of this conviction presently. I would now briefly notice, or, rather, mention, those processes in which an organic or solid body is employed. And here I must apologise for giving little more than a catalogue of certain examples of the more important processes of each kind, without entering into detail; but these are so easily accessible in all their completeness elsewhere that I should have been obliged to curtail my own observations on the subject under consideration.

I do not think there is any valid reason why I should not dismiss the processes of the first division in a very few words: their general disadvantages are so evident. The greater number depend upon the application of an organic substance to the surface to be protected; and, for the most part, of an inflammable substance, the presence of which on every part of a building seems undesirable. Among the materials suggested, we find the following:—Beeswax, applied either melted or dissolved in some solvent, such as turpentine; certain resins to be applied similarly; linseed, or other drying oils, either alone or in combination with sulphur, and bitumen; this latter in a state of solution in a volatile liquid. All these plans fail to fulfil several of our conditions. They alter the color more or less injuriously; the protective material is little more than a mere coating of paint, behind which destructive processes may go on as before, and it has no true adhesion to the stone, and is generally subject to decay itself. Gelatine and starch have actually been suggested as preservative materials, but they are evidently—the latter especially—subject to rapid destruction. Numerous suggestions as to coating stones with various solid earthy and mineral matters have been made, but they conceal rather than cure defects, and can have little or no effect in counteracting chemical injuries.

Among such processes the employment of a thin wash of Atkinson's cement in water has been tried with success on open porous freestones in Yorkshire; it would, however, be quite inapplicable to the surfaces of compact limestones.

2. Among the processes of the second division the application of silicates in some form or other has been over and over again suggested and carried out. The simplest and earliest process consisted in the application of soluble or water glass to the stone. An immediate hardening occurred, and a partial protection was achieved. But the decomposition of silicate of potash (for silicate of soda is inadmissible, on account of the disruption of the stone caused by the efflorescence of the soda salts produced) was very precarious; the carbonate of lime did not always act upon it with certainty, nor did the carbonic acid of the air separate from it the silica at a sufficiently rapid rate. Then a decided improvement was made in the process. The surface was first washed with silicate of potash, and then with chloride of calcium or barium. The silicate was indeed at once decomposed within the pores of the stone, but an equivalent quantity of a soluble salt was formed at the same time—an unnecessary and even injurious product. In point of fact the stone becomes so much less porous after this treatment, that it is impossible to wash away this soluble salt from it, although we constantly meet with the statement—"The chloride of potassium formed can be readily removed by washing." The same process in its essential features has been adopted in the formation of artificial stone. The tendency of the soluble salt necessarily formed in this plan to crystallise and rupture the surface, is one of the drawbacks to its use. Soluble silicates have also been applied in compound processes, where organic bodies have been likewise used; and also in combination with the carbonates of zinc and lead.

Among the other purely chemical processes I have only time to notice four. A solution of hydrofluoric silicic acid, followed by one of caustic baryta, is applied to the stone. A hardening occurs, and the stone is rendered, if a limestone, hardly alterable by acids; yet the surface is abraded by the violent effervescence caused by the hydrofluoric silicic acid; and a saline impurity is introduced by that chemical as ordinarily made. A solution of silicofluoride of aluminium has also been tried with symptoms of success, but this liquid, like hydrofluoric silicic acid, produces an effervescence with limestones. A third process consists in the use of superphosphate of lime, which, by acting upon the carbonate of lime of the stone (an action accompanied by effervescence), forms neutral of lime, hardening the stone, and rendering it less absorbent. The simplest of all these processes is the application of a solution of pure silica in water. This fulfils most of the conditions of success; it does not alter the color nor cause any effervescence, but, as a protective material, its action is inefficient; and, with very soft stones containing much carbonate of lime, it has a tendency to contract upon and injure the surface, without penetrating far into the substance. There is still another process, the nature of which I am, I regret to say, not at liberty at present to describe, but which, so far as I can see at present, theoretically and practically fulfils every condition of success. The process to which I refer will shortly be made public, and I believe a more extensive experience of it will strengthen my opinion of its merits.

IV. I need not detain you long with my observations on the effects, as revealed by chemical analysis and microscopical examination, of the several applications to which I have referred. In consequence of the general presence of a larger or smaller quantity of water in stones, this water existing in a state of mechanical rather than chemical union, a substance like oil, wax, fat, paraffin, resin, or bitumen can never come into sufficiently close contact with the particles of stone to be in intimate union with them, and it makes little difference whether the oily substance be applied hot or cold. Where the whole of the mechanically combined water has not been driven out by long heating of the stones previously to the application of the melted wax or oil, the surface of the stone and the subjacent parts present, when examined in thin sections, a great number of minute air spaces, amongst which the oil or wax globules lie scattered. These processes offer, therefore, no chemical, and only a partial mechanical protection against the ravages of water, carbonic and sulphuric acid. The oil, if a drying oil, like linseed, resinifies after a time, but does not form a coherent protective envelope for each granule even then. The same remark applies to wax, resin, paraffin, and bitumen, &c.; and where an excess of these materials is present it forms a coat of paint upon the surface, liable at any time to scale off, owing to its incompatibility with and lack of adhesion to the surface beneath. Where a stone can be thoroughly baked, so as to drive off every trace of water before being treated with oil, &c., the effect produced when examined under the microscope is manifestly more satisfactory, and the few trials that have been made have been attended with considerable success; but of course such a plan is impracticable on the large scale, although, if there should occur cases where it was admissible, crude paraffin suggests itself as the most unchangeable material for the purpose. Paraffin, however, suffers a most marked contraction when passing from the liquid to the solid state, and this might prove a slight drawback to its use. When examined carefully with the assistance of the microscope, stones coated with any of the various oily preparations of Class I. present a dirty appearance—an appearance which is often conspicuous enough to the naked eye, and depends on the stickiness of the surface; and in the case of specimens to which a solution of sulphur in linseed oil has been applied, crystals of sulphate of magnesia and sulphate of lime may be traced. These sulphates arise from the gradual oxidation of the sulphur in the oil. We have already pointed out how prejudicial their formation is, and any process causing or favoring it is inadmissible in consequence. I have obtained portions of decaying dolomite from two or three different buildings in London, and I have remarked most conspicuous disruptive effects produced by the crystallisation of sulphate of magnesia within them. This salt, in crystallising, takes up large quantities of water, and expands greatly in so doing. The effect of a protective coating of a mechanical character upon dolomite in this condition is very slight. The crystallisation proceeds, and finally throws off portions of the hardened oily or bitu-

minous coat, which in their turn drag away small adherent particles of stone. The merely mechanical protection afforded by washes of cement and similar materials is subject to failure from the same causes.

As to the effects on building stones of the chief processes of the second class, they are extremely varied. If salts of soda be employed, such as the silicate, then carbonate or sulphate of soda or chloride of sodium appears as a white efflorescence. Not only is this unsightly, but, if it be closely examined, a minute particle of stone torn off from the surface will be found upon the summit of each hair-like crystal constituting the efflorescence. If potash salts be used in the protective process, efflorescence does not generally occur, but the surface remains long damp, and when it has become dry (if this should ever take place), cavities would be left where the soluble salts have been washed out by the rain. Experiments on a small scale have proved to me that this is really the case. Furthermore, this washing out or cleansing process by the action of rain is a very slow one, and it will be found, on applying suitable tests to the stone prepared by any of the processes where an alkaline silicate has been used alone, that they invariably reveal the existence of a large quantity of alkali. Where a wash of alkaline silicate has been followed by a wash of chloride of barium or calcium, not only must a quantity of soluble salt equivalent to the insoluble salt be formed, but, if the chloride of barium or calcium be applied in excess, a still larger quantity of useless material will be introduced. Chemical examination of stone prepared by this process show how completely impracticable the attempt is to regulate the absorption of the two liquids properly. A porous stone saturated first with sulphate of alumina and then with caustic baryta, two solutions which, if applied in exactly equivalent proportions, should yield no soluble, but two insoluble compounds, presented, under the microscope, an immense number of most minute non-coherent particles of sulphate of baryta and alumina, easily removed by the mechanical action of water. Hydrofluosilicic acid produced a violent effervescence on the surface of stones containing earthy carbonates as bases, destroying the fineness of the surface, although it appears to exert a hardening effect, particularly if succeeded by the application of caustic baryta in solution. In the case of sandstones, hydrofluosilicic acid destroys the cementing material if it be carbonate of lime, and the surface is not rendered harder but actually disintegrated. The most interesting results are obtained in the examination of stones which have been treated with a solution of silica in water. This solution, which I have mentioned already as obtainable with great ease, owing to the recent discoveries of Professor Graham in Dialysis, and may be prepared of various degrees of strength, up to about 4 per cent. 4 parts in 100 of dry flint or silicic acid. When this solution comes into contact with carbonate of lime in any form, if strong, it gelatinises; if very weak, it forms with a portion of the lime, a silicate of lime, a very permanent and insoluble compound. By a similar action carried to its extreme limit, by which nearly all the original lime is removed, and nothing left but silica, corals and shells, and other bodies are now found (in the triassic red conglomerate of South Devon) converted into flint or hornstone. When this solution of silica is applied alone, and in a pure state, to a surface of stone in order to preserve it, if the stone be naturally soft and friable—chalk for instance—the result is in no wise favorable, for the silica solution first partly gelatinises on the surfaces, then as the gelatinous film dries it contracts, and, in contracting, draws away small particles of the surface with it; the film finally falls off. Its action under other conditions seems less unfavorable. But I have not examined the subject in all its details as yet. As to a solution of fluosilicate of aluminium, I have not had sufficient experience to pronounce a definite opinion as to its effects on stone; theoretically, the probable principles of its action are satisfactory. The solutions of lime and magnesia in water are so weak as to produce no appreciable alteration of any kind in materials submitted to their action. There is another process, the tangible results of which seem favorable. I refer to that in which solution of silicate of potash and aluminate of potash, of particular strengths, and in particular proportions are mixed, and the mixture then applied to the stone. If the mixed solutions be kept some hours previously to their use, they solidify into a glassy mass, containing silicate, alumina, and potash; this latter soon becoming carbonated. The mixed silicate of alumina, and hydrate of alumina produced, resembles very closely some of the varieties of the mineral allophane, and collyrite, neither of which are distinguished by durability or cohesiveness; yet, in actual practice, the artificial compound seems to have considerable binding power, so that powdered Caen or Bath stone may be effectually reconsolidated by its means. The presence of a large quantity of potash in the preservative solutions of course prevents the process from fulfilling our 7th condition, but the inventors are endeavoring to reduce the amount of soluble potash salt produced in the reaction; at present, the alkalinity of specimens prepared according to their plan is very marked.

NEW RAILWAY STATION AT STAFFORD.

A NEW railway station is on the point of completion at Stafford, in place of the dirty inconvenient sheds which have so long not accommodated travellers at this busy portion of the line.

The new station is of considerable extent. The whole extent of the platform being 740 feet; only 540 feet of this, however, is covered in. The main block of building on the up-line consists of a booking and telegraph office, flanked by dining, refreshment, and waiting rooms. The booking-office, an apartment 50 feet broad, is furnished with a semicircular screen, which, with a slight partition, divides the first from the second and third class passengers. To the left is a large dining-room and refreshment-room, while to the right run in succession the first and second class waiting-rooms for ladies and gentlemen respectively. The waiting-rooms are not very large, but as there are four upon each side, they will, perhaps, be found sufficiently spacious. Above the refreshment-rooms are the offices of the goods' superintendent for the district, while above the waiting-rooms are those of the permanent way manager. The platforms, which are paved with Staffordshire tiles, are covered in with iron and glass roofing, which extends over the nearer line of rails, and will consequently shelter the passengers while alighting. From a pipe, that runs the whole length of the roof, depend gas lamps. Flights of steps on each side of the booking office lead to the crossing bridge. On the down-line the central apartment is a first-class refreshment-room, fifty feet in length, faced at either end by a small office, which, with its projecting window, serves to break the monotony of the long length of building. At the further end of the first-class is a second-class refreshment-room, 43 feet in length. The waiting-rooms upon this side are equally distributed on each side of the central refreshment-room, the first-class being at the nearer and the second at the further end. At the ends of the platform on each side are covered sidings, for the reception of carriages from the North Staffordshire, the Shropshire Union, and any other branch lines which may be connected with the station.

New engine and goods sheds—the latter 150 feet in length—have been recently erected. The passenger station itself has occupied about seven months in erection.

The total estimated cost of the building is over £20,000. Mr. Baker is the architect for the Company; the contractor is Mr. Parnell, of Rugby.

THE new machines constructed for boring through the Alps, have been tried with success; 730 metres have already been pierced on the French side, and 950 metres on the Italian side; consequently nearly 1,700 metres, out of 12,000 metres, about seven miles and a half, have to be bored through.

PROFESSOR SMIRKE'S LECTURES ON ARCHITECTURE AT THE ROYAL ACADEMY.—LECTURE III.

IN my last lecture I touched upon a few of the more interesting objects on the shelves of the British Museum, that have special reference to architecture. The subject is well rich in material, for I doubt whether any library in the world equals that in the British Museum, either in extent or value; and I purpose, on a future occasion, to pursue the subject, and continue, in a cursory way, to direct your attention to such other works as seem to me best calculated to impart instruction or to excite interest in the minds of those engaged in the pursuit of architectural knowledge. But I will this evening call your attention to another library, which may be, in some sense, regarded as a public library, but which is very different, no doubt, both in respect to extent and value, from that to which I have already adverted. I refer to the library which forms an important part of the Soane Museum. Being a library wholly formed by an architect, and bequeathed by him in trust for the express use of architects, it seems to have special claims on my attention here, and those claims are enhanced by the long connexion that existed between this Academy and Sir John Soane.

It is by no means my intention or desire to constitute myself the apologist or the critic of that, in some respects, remarkable man. With his personal peculiarities—with his temper and disposition, with his foibles and eccentricities—we have nothing whatever to do here. Let those who have no defects of temper or of character throw the first stone; I certainly will not venture to do so.

As an architect, he undoubtedly was, in some respects, remarkable. He sought for novelty and originality in whatever he did, and not unfrequently he succeeded in attaining the object of his search. He was very deficient in greatness of style, delighting rather in small conceits and whimsical contrivances to produce effect. Though he can hardly be said to have possessed genius in the higher sense of that word, he had much ingenuity. He moreover had some aspirations after the attractive but hazardous quality of the picturesque in architecture. If I have declined, on the present occasion, to be the censor of his personal peculiarities, so I would equally refrain from investigating the motives which may or may not have influenced him to devote his museum and library to its present semi-public purpose. Let us take the fact as we find it, and admit at once that the bequest was a liberal contribution towards the education of his professional posterity.

It pleased Sir John to apply for and obtain the sanction of Parliament for the formation of a trust, imposing on the trustees certain very clearly-defined duties, which duties the trustees, by accepting their office, became morally and legally bound truly and faithfully to perform, at all events until the same authority that imposed them shall have thought fit to modify or annul them.

I have ventured to say thus much publicly to you because the trustees have not unfrequently been made the subject of considerable misrepresentation. Sir John evidently desired to limit the examination of his collection to those only who studied architecture either as professors or amateurs, certainly not intending to throw it open to indiscriminate view. That such was his intention is conclusively shown by the particular conditions which he so carefully imposed; and a trustee, like an executor, can by no means depart from, or even vary, a single condition laid down by the testator without incurring the very serious charge of neglecting or exceeding the powers of his trust.

The museum, properly so called, will not engage our attention this evening. Those who have made themselves acquainted with its contents know that they are of a very miscellaneous character, comprising some objects of great value and interest, and some of a most trivial and insignificant nature.

It is to the library only that I am now about to advert, avoiding, as far as may be possible, such objects as exclusively concern the mere antiquary, inasmuch as the time at our disposal is very limited, and as the special purpose of these lectures is, by the very constitution of the Academy, confined to such objects as are calculated to further the professional education of the students. This same consideration excludes us also from advertence here to the rich stores of mechanical knowledge which are to be found on the shelves of this library.

That Sir John was perfectly aware of the high importance to every architect of a thoroughly practical knowledge of building is sufficiently apparent from the contents of his library, and was repeatedly dwelt on by him in the lectures which he delivered from this place. But it is to his books on architecture as a fine art that I am bound here to confine my attention; and it is certainly to the works of this character that the library owes its chief attraction, and from them it derives its chief value. It comprises nearly every architectural publication of value that had appeared during his own professional career, down to the period of his death, in 1837, as well as a large store of books of early date. Among the earliest in the catalogue you will find Alberti's "*Libri decem de re Edificatoria*." Of this well-known book there are here six editions, but among those I do not find the original and earliest Latin edition of 1512. A folio edition, in Italian and English, appears to be that which its owner read with greatest ease, as it contains many marginal notes by him, and other evidences of his having carefully read it.

On a former occasion I have, from this place, expressed my admiration of Alberti's works at Rimini and elsewhere. His church of San Francisco is in the best style of the early Renaissance, before it had degenerated into the commonplace manner of the following century. It is worthy of note that Vasari touches but slightly, and with some apparent indifference, upon this work, although he must have been especially familiar with it, seeing that Vasari dwelt some time in Rimini.

In truth, Vasari, excellent as he may be as a biographer, had, as an artist, but little genius, and he was unable to appreciate the somewhat dry, antiquated manner of Alberti. That artist not only possessed undoubted talent as a practical architect, but remarkable merit also as a writer. His book is full of valuable remarks, and attests at once his good sense and his erudition.

What is also specially worthy of our observation is, that he appears, in an eminent degree, to have united a minute and accurate technical knowledge with a fine æsthetic feeling. The distinction which he draws between beauty and ornament is, I think, most just and true. "Beauty," he says, "is something lovely, which is proper and innate, and diffused over the whole body, whilst ornament is something superadded or adventitious, rather than innate."

Alberti, and, I might say, Alberti's school—the school of the Early Renaissance—well understood the distinction between beauty and ornament.

The vulgar of all ages, countries, and ranks are apt to think that ornament means beauty, and that in order to be beautiful we must needs be lavish in ornamentation. This great error leads directly to that excess which degrades art, whether it be architecture or her sister arts. It was excess which marked the decadence of Roman and of Medieval art; and it was the disfigurement of excess which stained the purity of the Early Renaissance.

I speak, as it is fitting and becoming that I should speak, with great reserve, and in the most general terms, when touching on the state of our art in the present day; but I think I am only fulfilling a plain duty in denouncing the tendency to a meretricious use of ornament, which may, perhaps, be discerned amidst the conflict and rivalry of prevailing tastes.

No doubt, in this country, the greatest diversity of feeling exists in matters of art; so impatient of all restraint is our countryman, that there is no privilege that he more freely exercises than that of differing from his neighbour in opinion; and in taste especially, we all proverbially and most widely differ.

Some will teach us that ornament alone is architecture, and that a building without ornament is but handicraft work, necessarily devoid of art, and beneath an artist's attention; whilst others will look with equal contempt upon all mere ornament as a frivolous and puerile inutilty, altogether unworthy of any serious regard. I believe that in this case, as in most others, each of these extreme opinions is equally remote from the truth.

At all events, I am confident that, however we may be led away by our imitative habits into occasional extravagancies and unseasonable excesses, the natural bent of the English mind is towards moderation in the use of ornament.

Flagrantly as we may sometimes err, and wild as may be the caprices we may sometimes indulge in, still, in the main, the tendency of public taste is of a plain, grave, and practical character; and I am very greatly mistaken if, when we regard, either on this side of the Atlantic or the other, the overloaded piles of enrichment which constitute the pretentious façades occasionally presented to us for our admiration, by far the majority of us fall into the unimpassioned and calculating inquiry of "*cui bono?*" Not only does this excess

offend, as it appears to me, the naturally simple taste of this country, but it is plainly at variance with the lessons daily taught us by our English climate. Moistness is the normal condition of our air, and clouds are the normal clothing of our sky; for at least two-thirds of the year our buildings are constantly liable to be drenched in rain, whilst for the remaining third they are subjected to the still severer trials of frost; and thus, in this matter, the dictates of common sense are in perfect harmony with the suggestions of our natural taste.

I perceive that the short and pointed sentence which I have quoted from Alberti has led me into a somewhat verbose diversion. In this respect I am failing to profit by the example of my author, whose style of writing is as free from verbiage and prolixity as his style of architecture is exempt from frivolous and intrusive ornament.

The next book which comes to hand is of a very different character. Indeed, one is sometimes almost led to feel surprise how books so widely asunder in their character and quality can submit to the close and constant juxtaposition that they are subjected to on our bookshelves.

The book, I say, which I now take up is that of Dieterlin's "*Architectura de Constitutione, Symmetria, ac Proportione quinquæ Columnarum*," published at Nuremberg in 1598. It bears sad testimony to the rapid deterioration of art, and to the special proneness to a corrupt excess among our German neighbours. In the extravagant and grotesque scrolls and cartouches which abound in this volume, we see at once from whence were derived the strange ornaments of our Elizabethan and Jacobite styles, although those styles as displayed in our own country might lay claim to the character of simplicity and sobriety by the side of these wild enormities of Dieterlin.

In a former lecture I expressed my belief that much of the degradation of architecture in the seventeenth century might be due to the practice at that period of the same individual pursuing all the three sister arts. Whilst any remnant of the purity of early art, and of the good sense of the early artists, survived, this combined cultivation of the fine arts was not attended by any evil consequences. On the contrary, the arts lent to each other that mutual aid from which they derived mutual advantage; but it was when the torch of genius had died out and our art fell into decay, that the dangers consequent on this union began to develop themselves.

When men ceased to understand the true scope of each art, and to recognise their respective limits, they lost the power of designing well in any art. The sculptor and the architect became merged in one artist, who was fain to build up his clouds, and to construct celestial glories as if he was erecting a stone wall; whilst, on the other hand, he designed buildings wanting many of the essential attributes of real architecture—buildings, indeed, that could only be made to stand by dint of ties and other hidden mechanical contrivances. The physical impossibility of executing in solid materials the architectural vagaries of Dieterlin, as exhibited in the designs before us, is sufficient evidence of his inability to design architecture. He seems to have been utterly regardless of the fact that architecture is a constructive art subject to static and dynamic laws. Far different was it in the good times of the previous century. I believe we may defy the most scrupulous critic to point out in any one picture of Raffaele's, of G. Romano's, or of M. Angelo's, a single building or fragment of architecture, which might not with perfect facility be executed, line for line, in stone or timber.

I touch with great reserve on the confines of my neighbours, and should regard it as presumptuous on my part to affect the critic in the sister arts; but still I would venture to urge on the students of the painting school that in the architecture which they may deem it proper to introduce in their pictures they should never be unmindful of the practicability of the structures they represent. It appears to me that it is just as incumbent on the painter or sculptor to give to his building a suitable and sufficient base as it is to place his figures properly and naturally on their feet. The error of representing an impossible structure is, in its degree, just as great as that of representing a man in an impossible attitude.

I must, however, at once revert to the Soane Museum. I find on the shelves a volume of drawings, chiefly executed on vellum, described in its manuscript title as "*Disegni di Architettura del Anno 1400*." It is a curious volume, the history of which I know nothing, although of its authenticity, for various reasons, there can be, I think, no reasonable doubt. The execution of the drawings is very indifferent, and there is little attempt at correct delineation, and yet there is not wanting freedom and a certain amount of manual and almost artistic dexterity. The volume seems to do for the fifteenth century what Willars de Honcourt's book of drawings, recently submitted to the Institute of British Architects, does for the thirteenth century.

There are between sixty and seventy drawings, but none bear any titles, and they are probably original studies or exercises in architectural and ornamental design. A very little correction and modification would make some of these designs elegant compositions. I have upon a former occasion observed upon the absence of the regular orders of architecture in the early works of the Renaissance. This volume remarkably corroborates my statement. There is not, I believe, a single instance in the book of a dominant order determining the proportions of a building. Columns there are in abundance, and of a great variety of whimsical forms; but in all cases, I believe, each tier of columns and arches represents a separate floor. A constant use of arches and niches, a prevailing habit of panelling, and enriching the panels with arabesques, as on the sides of square columns and pilasters, and a habit of covering all vacant spaces with square and circular panels and medallions, filled in either with slabs of colored marble or with foliage, generally in somewhat flat relief—these appear to be the prevailing distinctions of the quattro-cento style, which stands out with very marked differences from the styles immediately preceding and succeeding it.

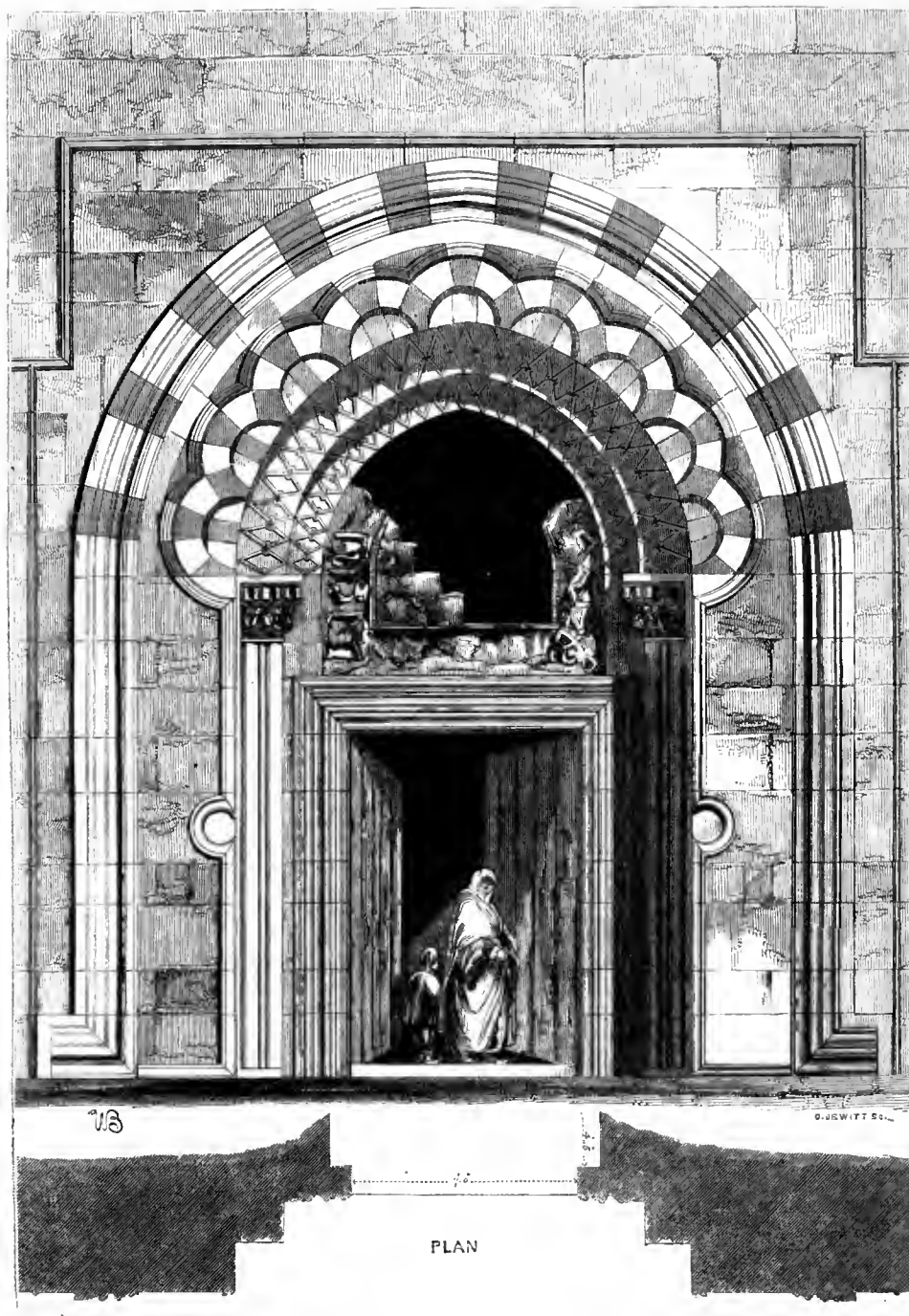
Another book, which I must not pass by, is a fine copy of the earliest edition of Philibert de l'Orme's Architecture, bearing date 1567. Under the auspices of Catherine de Medicis, he may be regarded as the introducer of the Renaissance into northern Europe. She came of a race eminently distinguished in the history of art, and the author in his dedication eulogistically refers to her as delighting in architecture, and as sketching with her own hand the noble palaces which she caused to be erected.

It is curious to find at this early period the author groaning over the degeneracy of his profession, and complaining how few true architects there then were. Some self-styled architects were, he says, but mere "master masons," whilst others were but geometicians, or men addicted to the literature, but neglecting the practice, of their profession. His imaginary portraiture of the head-ideal of an architect savors of the quaint, allegorical taste of his time. He would represent an architect, he says, (and there is an illustrative diagram of such a man) with three eyes: one for the observation of divine things and the works of God; the second for the careful observation of things present and around him; and the third, for looking into the future, foreseeing, and so providing against coming evils. He should also have four ears, indicating that it more behoves him to listen than to speak. Four hands should be given to him, that he might be the better able to do all that is required and expected that he should do; whilst his feet are to be winged, pointing out that he must be of quick intelligence, and rapid in action. There are many other things worthy of observation in this curious volume; but I must hasten on to others.

I find a volume of original drawings by Carlo Fontana, formerly in the library of Paine, an eminent architect of the last century. It represents the state, at that period, of the Coliseum, at Rome, and Fontana's supposed restoration of it, with his suggestions, certainly not a happy one, for the erection of a church within the area of the amphitheatre, to be dedicated to the Christian martyrs who suffered there. I need scarcely say that this monogram on the Coliseum is greatly inferior to that unpublished work on the subject existing in the British Museum, to which I directed your attention last week. These drawings, of the seventeenth century, by Fontana, are very neatly and ably executed, quite free from the dry hard manner prevalent among architects at a later date. The lines are in brown, and the shadows delicately indicated with a cool neutral wash, probably Indian ink or some color equivalent to it. This mode of execution was retained throughout the last century, for I find here a large folio volume containing original drawings by Wren and others of his time which are all similarly treated. Some, also, in the volume attributed to Inigo Jones are so executed.

The use of a brown outline with cool shadows was, I believe, pretty general among English as well as foreign artists up to quite recent times, and it is, perhaps, doubtful whether the modern substitution of brown sepia shadows with Indian ink outlines can be regarded in any respect as an improvement.

Among the treasures which Sir John considered to be worthy of a place in the strong



DOORWAY OF MOSQUE AT KHOSH DINISSAR, MESOPOTAMIA.

room of his museum, I find a Roman missal of the early part of the sixteenth century, illustrated with miniatures of the greatest deficiency by Lucas van Leyden and his scholars. It is worthy of remark that all the architecture and ornamentation with which these miniatures are elaborately enriched, are, throughout, very distinctly Gothic in style; late, it is true, but without any admixture of classic taste, and yet this artist died in 1533, and was therefore contemporary with Raffaele and Giulio Romano. The co-existence of two schools so remote in character and spirit, yet geographically so near as Flanders and Italy, shows how little social intercourse could have existed in Europe at that period. Whilst admitting his merits and superiority to others of his school, Lucas van Leyden is described by Fuseli as "ignorant of light and shade in masses," and his forms are condemned as "lank, meagre, and ignoble," and yet this artist "was studying and painting within what is now a day or two's journey from the ensembles of Leonardo da Vinci, M. Angelo and Raffaele."

There are, I trust, few here present who are not aware of the beautiful work preserved in this same strong closet, known as the Commentaries on St. Paul's Gospel, by Marino Grimani, illustrated by the beautiful illuminations of Giulio Clovio. This work, certainly the gem of the collection, presents a curious contrast in its architectural accessories with that to which I have just adverted. The style is strictly Raffaelesque, with medallions and arabesques, such as we see in the Loggia of the Vatican. I cannot pass from this magnificent, and almost priceless, manuscript volume, without advertent to the elegant character of the hand-writing. When we look upon the beautifully uniform, clear, well-proportioned, deliberately-shaped, and, I would almost say, dignified, style of the lettering, and compare it with the calligraphy of the nineteenth century, in which the words look often more like the hasty, unmeaning scratches of a bad pen than the expressions of a man's thought and sense, it must be admitted that the lapse of 300 years has brought, in this respect at all events, no improvement whatever.

Nor, perhaps, can this be wondered at, when we find, as that eminent scholar, Mr. Panizzi, has lately proved, the great Bolognese painter Francia himself, did not think it beneath him to unite the study and practice of typography with the highest efforts of a most gifted pencil.

Descending, now, 100 years, we come to the sketch of Inigo Jones; not the original book, it is true, but an admirable fac-simile of it, presented to Sir John by the late Duke of Devonshire, the owner of Inigo's own handiwork. It is not for me to dwell on this sketch-book, as it consists exclusively of studies of figures and drapery. The book bears date at Rome in 1614, when the great architect was about forty years old. I cannot refrain, here, from adding that the motto which graces the first page of this sketch-book is "Altro diletto et 'Imparar non trovo" (I have no pleasure but in acquiring knowledge), a sentiment which does high honor to Inigo Jones, and one which should never be absent from the mind of an artist, be he young or old. When a man has reached the period at which he imagines that he has learnt his art and needs no more teaching, he may rest assured that he has fallen fully into the snare and yellow leaf.

In an evening devoted to the literary bequest of Sir John Soane, it seems natural that I should not altogether abstain from touching, for, at least, a few minutes, upon that eminent professor's own peculiarities of architectural design. Although within these walls we very wisely abstain from the remotest criticism on the works of contemporary artists, that salutary limitation has long ceased to exempt Sir John's works from the free comment of the critic. Upwards of a quarter of a century has passed away since his death.

I have, however, no inclination nor intention here to use that lash. I would, but remark, generally, that a constant endeavour to seek out picturesque effects, especially in the design of interior architecture, seems to have led to much of that eccentricity of manner which most critics are inclined to condemn in his works, although it may be found to have resulted in some ingenious combinations, and, perhaps, occasionally in some original conceptions.

We are apt to attach too great value to that quality, "the picturesque." The application of the word is somewhat vague. It is a word of no very remote origin, for there exists, I believe, no word of equivalent value in any Classic tongue; and, certainly, there is no trace of any word calculated to convey the idea in the written records of medieval times—a fact which is, perhaps, the more remarkable as the quality which, probably more than any other, characterises medieval art is this same picturesqueness. To the best of my belief, this word was the invention of the writers on art of the period of the Renaissance. Its primary meaning is clear, although its application is, as I have said, vague and indefinite.

Whatever is especially well adapted for representation in a picture is said to be "picturesque." In that sense its special applicability to natural scenery is obvious; but it is also very properly applicable to those objects of art which, either from their form or color, or from the combination of forms or colors, that they may present, are particularly capable of being agreeably represented in a picture. Thus, an old or ruined building is usually more picturesque than a perfect and new one; for there is a hard dryness in straight lines and sharp angles, and a crudeness, and almost harshness, in bright coloring, which cannot, by the exercise of any amount of ingenuity, be made so pleasing to the picture-loving eye as those more undefined lines and blended tints which almost necessarily characterise a ruin.

It is finely said by Byron—

"There is a power
And magic in the ruined battlement,
For which the palace of the present hour
Must yield its pomp and wait till ages are its dower."

And a somewhat similar idea is expressed by another poet—

"Time
Has moulded into beauty many a tower,
Which, when it frowned with all its battlements,
Was only terrible."

There is also a fruitful source of the picturesque in those combinations or compositions of lines of which the result is an ensemble or group of forms pleasing, though we know not why they please. To dwell on the picturesqueness of medieval art would be superfluous, and, indeed, trite, for picturesqueness is, as I have said, the special and appropriate quality of that style of art: the groups of towers and pinnacles, and gables and chimney-shafts, which characterise it, are the very embodiment of the picturesque.

I think it may be more useful to you to point out for your observation how that far simpler and less pretending forms are susceptible of this attractive quality when treated by the hands of an artist. It is impossible to stray over that land of art—Italy—without meeting at every turn with plain farm-buildings, ordinary lodges—nay, sheds and gateways, of high æsthetic interest. Not that they have been purposely so designed to please, but the old Italian mind seems to have been so thoroughly imbued with artistic feeling, that they could not help imparting it to every common object they touched. Vague and difficult of precise definition as this word "picturesque" is in the painter's art, when applied to architecture it is certainly still more vague. We may readily enough say that monotony, uniformity, and severity of outline are opposed to the picturesque, and that freedom and absence from restraint and variety of outline are circumstances favorable to, and consonant with, the picturesque. Yet to say that these latter circumstances are essential to its existence, or that the former are unreservedly incompatible with it, would be going a great deal too far.

Can we, for example, venture to say that the Doric temple of Minerva at Athens is not picturesque? Yet symmetry and severity of outline are its special characteristics.

So in an ordinary modern London street we may find entire absence from restraint, and a superabundant variety of outline, for every man builds as he likes, and so variety is carried even to excess, yet no one will quote Oxford-street or Fleet-street, on that account as furnishing examples of picturesque architecture. In truth, I apprehend that this very favorite but somewhat unintelligible word must be classed with the adjectives, grand, beautiful, and such like; words which address themselves rather to the feelings than to the judgment. Hence it arises that, in architecture, picturesqueness is a very dangerous object of ambition, for if it be sought for by those who cannot feel it, there would be imminent risk of their running into ridiculous conceits.

Their abortive attempts at the picturesque seem to have the same relation to really and truly picturesque compositions that nonsense verses bear to real poetry. Each may present the requisite combination of long and short syllables, and the legitimate number of them; but the one is empty and unmeaning, whilst the other may, perchance, be fraught with sense and genius.

Even among men who may really have some true feeling for the picturesque, there are those to be found who have a sort of maudlin love of it, leading them to an extravagant and morbid craving for it; to such an extent, I believe, as sometimes to affect even the religious faith of those who abandon themselves to it. There are those who can scarcely say their prayers with warmth and sincerity, unless assisted by such helps to devotion as the architect or decorator may be able to afford; "the dim religious light," the "storied window richly light," and the hierarchy of gilt and painted sails.

It may be uncharitable to doubt the reality of feeling of such devotees, and we are here all of us too well acquainted with, and too much alive to, the influence of the fine arts upon the mind and heart of men, to doubt their power of fostering a genuine religious sentiment; such an influence is, indeed, one of their most legitimate and salutary effects.

But every virtue has its sham: there is the courage which needs a dram to call it into existence; there is the charity which owes its birth to ostentation; and there is, as I have already intimated, the religious sentiment, which needs these external melodramatic appliances to stimulate it into active existence; its votaries need a picturesque architecture, and even a picturesque costume, for their sustenance, otherwise there is reason to fear that their pious zeal might wane and wax faint.

These, however, are but examples of a false and counterfeit feeling. Men's minds are curiously and variously affected. There are some more deeply affected by contemplating the lowly, unambitious village church, wholly wanting the attractions of sculptured art, than by gazing up at those vast petrifications of religion which have awed so many generations of worshippers.

Still, I repeat it, there is no denying the wide prevalence of that influence which architecture exercises, be it evidence of human frailty or of the potency of art; and it seems a very legitimate exercise of the witchery of art to practise those cunning devices by which she can be made to elevate the mind or touch the imagination. It is in truth the special province of the fine arts to do so.

The kindred arts of poetry, of music, and of painting, have in all ages asserted their dominion over the mind of man, and have claimed to bring even his enlightened intellect within the sphere of their potent spells; surely then, architecture neither abdicates its proper functions, nor forfeits its character for utility when it aims at exercising over the mind the like mysterious influence.

But if it be true that such power belongs to our art, it behoves all who practise it to regard that power as a sacred trust, and not to risk its character by exercising its influences improperly.

After all, I believe that the most legitimate and the most wholesome exercise of the power of art is that which is inspired by truthfulness of character.

I do not mean that the brewhouse or the laundry, when unavailably forming part of the landscape, may not most legitimately have their homely domestic uses veiled under some more pleasing forms than those afforded by the undisguised smoke-fue or the ventilator; but in buildings demanding architectural character I am confident in the opinion that by giving to each the expression that most befits it, we secure for it at least the one great merit of truthfulness of character. The tale that is most truthfully told is usually that which most affects us; and although it is not to be desired that the conventional forms and structural necessities, which an architect has always so largely to contend with, render it vain and futile to attempt to give a building all the expression of which the painter's or the sculptor's work is susceptible, yet our art would little merit the position which it is admitted by all to hold as a fine art were it unable to affect the imagination, and, to a certain extent, the passions. It is, I apprehend, more than a mere figure of speech to say that a building frowns on us or smiles on us, or that it appears to attract or repel us. There is in one building a majesty that subdues us, in another a levity that even amuses us. There are some buildings of so festive a character that in their very aspect they appear to sympathise with us in our joy, whilst others, on the contrary, are of an aspect congenial with an opposite tone of mind.

These are the qualities which constitute character in architecture, and, therefore, as I have said before, so do I repeat now, the character of his work should ever be one of the chief studies of an architect. But I perceive that Sir John's aspirations after the picturesque have led me into too long a digression.

There are other peculiarities in his works on which I need not especially dwell, far whatever may have been his faults, they have not been imitated by others, and have not, therefore, influenced his successors either for good or evil. There were so many of these peculiarities or eccentricities in his manner of designing, that I am inclined to believe that he was ambitious to found a style of his own. Without, perhaps, venturing to go so far as to condemn altogether any such attempt, I would, at all events, say that to found an original style of design in architecture would be a task demanding a very high rank of genius, and it is an enterprise which I certainly counsel no man to undertake.

I believe it was some vague and weak ambition of this nature which led Mr. Dance to conceive and execute so unfortunate a design as the front of the Guildhall of London; there is a tradition that such was his aim. He sought to produce a kind of cross between Gothic and Classic art, and the result was certainly not such as to tempt imitation or to enhance his fame.

I am convinced that no novel manner of designing which has deserved to be dignified with the designation of a style was ever the production of any one artist. It has ever been from the force of circumstances that styles, in one art at least, have gradually taken their rise. I need scarcely point out to you how greatly collateral circumstances, and accidental or local peculiarities, have, at all times, and in all countries, influenced the changes of style that have taken place in architecture. Of this, however, I took occasion in a former lecture to point out to you various notable instances, and many others might readily be adduced.

One of the ablest, as well as one of the most recent writers on the subject of the so-called Gothic architecture, M. Viollet le Duc, points to the use of small-sized stones as one of the special characteristics of that style, and nearly 200 years previously our own Sir Christopher Wren had made exactly the same observation. Both these writers point out how materially the style was modified and influenced by that practice. In the middle ages there were few good roads, and this rendered the cost of the transport of stone proportionately high; a cost still more seriously augmented by the inordinate tolls, private and public, then so often and so extensively, on some pretence or other, levied by the land-owners, whether lay or ecclesiastical, through whose demesnes or territorial limits the stones had to be conveyed to their destination. These causes of expense operated to so great an extent as to render the materials used in a building usually much more expensive than the labor required in working and setting them. Moreover, the want of regular employment for men in those times, and the consequent low scale of wages, rendered labor a comparatively unimportant part of the cost of a building. From hence a state of things arose exactly the converse of that which exists at present, when the mason is often better paid than the clergyman, and when canals, railroads, and machinery have reduced the cost of getting and carrying heavy building materials to a small fraction only of that which prevailed in medieval times. That former state of things naturally led to, perhaps, nearly all the peculiarities of the prevalent style of building. There was a lavish expenditure of labor in deep undercuttings and perforations, and the intricacies of every kind which, above all things, distinguish Gothic work, and which are, in truth, essential to the full and complete development of it. At the same time, the cost and difficulties of the transit of freestone naturally caused the use of it in small blocks, as observed by Wren and Viollet le Duc—a result which, of course, tended to encourage those very intricacies and delicacies which characterise Gothic carved work in general. Each boss and badge and crocket was usually a distinct stone; the capitals of the very largest pillars and piers were built up in courses of very moderate depth, each course of stone composing a distinct and independent band or tier of foliage or other ornamentation; whilst the shafts of columns, even in the largest structures, were, for the reasons I have adduced, usually of diameters measuring but a few inches.

In making these remarks I am very anxious not to be mistaken as making them with any view, in the slightest degree, to the disparagement of any special style. My aim is to show that, as the manner of building has always greatly depended on the particular circumstances of the time or the place, and as every phase of art has varied with the variation of circumstances, it seems as useless as, I think, it would be irrational to expect, to bring back architecture identically to any one past phase of the art, unless we can resuscitate and bring about again all the concomitant circumstances to whose influences that phase was due, and restore to it its special character—a resuscitation which, I think,

we may regard as of necessity impossible. At all past periods of our art every style has, in short, been the type of its own age, the result of that particular period which gave birth to it. The Byzantine style, for example, was the result of the grafting of an Oriental element on the Classic stock at a particular period of its existence. Had Byzantium succumbed to the West at an earlier stage of Classic art, the resultant style would probably have assumed a very different aspect.

Again, had not Peter the Hermit preached the Crusades at the particular period when a great æsthetic energy was developing itself in some parts of Europe, the aspect ultimately assumed by mediæval architecture might, perhaps, have been very different from that which in fact prevailed.

It is the stage of civilisation which a people may have reached, and the condition they may happen to be in, that determines the effect upon the arts of any great historical event.

To expect, therefore, to receive successfully in its integrity any style of art under circumstances wholly different from those which gave birth to that style, would be to entertain an expectation inconsistent with the experience of all past time.

We may very easily repeat, to any extent, the examples of any period we may fancy, but such repetitions, although it is occasionally—indeed, far too often—the fate of an architect to be called upon to produce them, are mere travesties, artistic whims, so to speak, the result for which on the part of the public taste, is by no means indicative of a well-founded or sincere love of art, but suggestive, rather, of the caprices of an uninformed, puerile taste which takes up or tosses away a style, as a child would its toys, just as the fancy of the moment or the caprices of fashion may dictate.

I have thought it well to say so much even at the risk of being reminded, perchance, that I am but repeating what I may already in another form, and on some former occasion, have ventured to say.

I am anxious to urge upon you, with all the emphasis I can command, that the modern tendency to repeat and perpetuate old forms, and thus to live, as it were, upon the wits of our predecessors, or, I might say, to feed upon the *réchauffés* of the past, is a mischievous tendency, when carried to excess, destructive of progress, and leading inevitably to debasement. I would not, then, have you to look with indiscriminating reverence on the architectural productions of past times; let those productions be ever judged with reference to their age and to the contingent circumstances of their existence.

In many respects the present age with justice may lay claim to the merit of having advanced as time has advanced. It has with truth been said that such has been the moral advancement of education and intelligence, that a poor child in a Sunday-school is in some respects better informed than the sages and philosophers of antiquity, and certainly much of what was called science by our forefathers has proved to be but foolishness. Nevertheless, we must admit that no such progress appears to be independent of those circumstances on which excellence of most other kinds depends, and to follow some different law. On a former evening I adverted to the apparent anomaly that in the twelfth century at a time when all Christendom was wrapped in the grossest state of moral and social tyranny, at that very period there existed in France a school of art which was then commencing to produce works which may, at the present day, be regarded as equal to those of the best days of antiquity.

Again, sculptors, as well as architects, are now, in the nineteenth century, endeavouring to rediscover the oldest principles of art, and to emulate, although *longo intervallo*, the works of artists who lived twenty-four centuries ago. We may seek illustration, too, in still another quarter. In Arabia a faith sprung up in the seventh century which deluged Europe with blood and tended to inculcate a gross sensual system—a faith which has raised the most formidable barriers against the moral improvement and civilisation of mankind; yet it was to the followers of that very faith of Mahomet that we owe some of the most graceful works that architecture has yet produced, as well as one of the most beautiful styles of ornamentation that human taste or ingenuity has yet devised. In short, we get bewildered in a labyrinth of contraries when we seek to assign the sources from whence has arisen that perception of beauty which constitutes fine taste.

However charmed, therefore, we may be by these manifestations of genius which past times afford us, our reverence for them need not be indiscriminate. We should endeavour to search out what is beautiful and worthy of our admiration and study, uninfluenced, as far as our weak nature will permit, by local, national, or sectarian prejudices.

It is from the high vantage ground of modern civilisation that we should pass in review before us the works of all preceding time, and of every creed and clime; not, however, by any means with a feeling of self-satisfaction or assumed superiority (for he must be, indeed, in a hopeless state who is not fully sensible of the inferiority of the present to the past in very many respects—so far, at least, as art is concerned); but rather let a due reverence for the works of past times be mingled with a sense of gratitude that so rich a storehouse of experience has been laid up by them for our use and benefit; and let us demonstrate our thankfulness by devoting all our energies, not to a dry, antiquarian, pedantic imitation, but to a painstaking endeavour to improve ourselves by searching out and studying those principles which may appear to have led artists of past times to so great excellence. Principles, remember, never change. To adopt, in conclusion, the language of a former eminent President of this Academy—language which, applied as it was to his own particular branch of art, seems, nevertheless, equally applicable to all art—"There may," he says, "be new combinations, new excellencies, new paths, new powers, but there can be no new principles in art."

It is to the exact understanding of these, therefore, that our best energies should be directed.

YORKSHIRE ARCHITECTURAL SOCIETY.

THE annual meeting of this members of the Society was held last week in the rooms, Minster-yard, York, when the Rev. T. BAYLY read the minutes of the proceedings for the past month and the annual report, which referred to the improved position and prospects of the Society, and to the objects of interest visited at the last autumnal excursion. On the adoption of the report, the Rev. T. BAYLY drew attention to the dilapidated state of the spire of All Saints' Church, North-street, York. The spire had been patched up and plastered, and was thought by some to be safe; but, nevertheless, the actual state of the spire was not the less dangerous. The spire of St. Mary's Church, Castlegate, he feared, was also dilapidated. He thought it would be desirable if something could be done, so that these spires, the only examples in the city, might be restored, or, at all events, that of North-street Church rendered safe.

Mr. G. F. JONES stated that the base on which the spire rested had decayed, and the spire itself was not safe. Instead of being taken down and rebuilt, it had been plastered over with cement. The spire was unsafe, although it might stand for a long time. In answer to a question, he said that it was possible to strengthen the spire.

Mr. J. C. SWALLOW suggested that as the Society had a balance in hand they might consent to give a small grant from their funds towards the restoration or rebuilding of this spire, and by this means a subscription might be raised to carry out the work.

The Rev. T. BAYLY remarked that it was the conviction of the late treasurer that the entrance fee of 10s. prevented many persons from joining the Society who would otherwise do so. In that opinion he concurred, and he, therefore, moved that the fee be abolished. After a brief conversation, the motion was agreed to unanimously.

CONSTANTINOPLE.—The magnificent mausoleum of Sultan Mahmond, is to be redecorated, by order of the present Sultan, and, when completed, will form one of the most attractive ornaments of the Turkish capital. The sarcophagus is to be surrounded by a silver railing, on which inscriptions, in letters of gold, will set forth the praises of the reformer. Several candelabra, in massive gold, are to be placed inside, and to the costly carpets which already adorn the tomb are to be added different tissues, masterpieces of Indian and Persian art.

ON THE ESSENTIALS OF A HEALTHY DWELLING.*

WHILST such are the results of the experience of the two leading metropolitan societies in regard to old buildings—and, as far as my information goes, it accords with that of some other societies—I am glad to notice instances of individual effort which have had complete success, doubtless arising in the main from the sound judgment and more careful management brought into exercise in the cases referred to.

In the parish of Chelsea, our honorary member, the Rev. Richard Burgess, and some friends, established, in 1851, two of the earliest renovated houses for families, which have proved an admirable example for those disposed to promote this object in a quiet and unpretending way. The houses are always filled with good tenants, on whom the most favorable results have been produced, and from the net receipts, after the payment of 5 per cent. interest on the outlay, which was £300, that amount was entirely paid off at the end of 8 years, and, since then, there has been a clear profit of between £30 and £40 per annum.

To give another example in London: a few months since I went over a considerable property in the city, part of which, in a central locality, comprises dwellings for 86 families of the working class, and, in another, three entire houses. The owner is a private gentleman, who derives from this house property his chief income. On coming into its possession he felt the responsibility of ownership, and desired to put it into a condition fit for the occupation of well-conducted tenants. I can testify to his entire success in that respect, and also to the contrast with the neighbouring property which his presents. All that he was anxious to do has been accomplished without pecuniary loss. His rent-book, kept with much exactitude, showed the greatest regularity of payment, and this he told me compensated for extra expenditures on various objects beneficial to the tenants. The following results of the experience gained in this instance may be useful. Of the gross amount received for rent, about one-fourth covers the taxes and general repairs, or one-third covers the whole of the landlord's expenditure, including the collection, contribution to schools, &c. A great secret of success has been the forbidding the practice of underletting as a rule, though occasionally a lodger is allowed. Another custom tending thereto is that of the owner going over the property himself quarterly. With much consideration and justice to the proprietor, one part of this property was, on a recent application made to Parliament by a railway company for power to take it, treated as an exceptional case, and allowed to remain as an instructive lesson to neighbouring owners: amongst others, the railway company which coveted its possession.

The success which has—doubtless, in the main, owing to careful management—attended the Society at Hastings, renders it worthy of special notice. It was established about five years since, and has now a paid-up capital of £18,000, of which £14,000 has been expended in purchasing the freehold and putting into good condition about 130 old cottages and two lodging-houses. An annual dividend of 6 per cent. has been paid to the subscribers, besides laying by 1 per cent. per annum as a reserve fund. A benevolent fund is formed among the tenants, and two visitors inspect the property every fortnight.

Three examples referred to in succession, after the two metropolitan societies, are instances in which old buildings have been exclusively operated upon. I shall now briefly allude to some instances in which societies have constructed new buildings, with more or less pecuniary success; and as there have been, since 1850, from 25 to 30 such societies established in various provincial towns in England, besides those in London, you will not expect me even to name them all.

The Strand Building Company, on their houses for 25 families, in Eagle-court, has paid a dividend of 4½ per cent.

The Windsor Royal Society, which was established in 1852, under the special patronage of her Majesty and the late Prince Consort, has now £9,000 invested in new cottages and in two lodging-houses, the net returns from which, owing to temporary circumstances, have lately yielded 4 per cent. to the shareholders, instead of 4½ or 5 per cent., which they would otherwise do.

The Redhill and Reigate Cottage Improvement Society, in a late report, stated that, from the eagerness with which their first built cottages were taken, they have been induced to add twelve more to the nineteen with which their operation commenced. The contract for the second series was at the rate of £120 7s. 1d. per cottage. A dividend of 5 per cent. has been paid to the shareholders, and £55 16s. 3d. added to the reserve fund, with every prospect, apparently, of the same dividend being continued. These cottages are very near to the railway station, and have a neat appearance; they resemble much some of those built by the Windsor Royal Society.

Amongst the efforts which may be classed with those of associations are the model lodging-houses built by the Huddersfield Improvement Commissioners, in pursuance of powers granted by their Acts of Parliament; and this, I have been informed, is the only instance in which municipal authorities have erected such buildings at the public cost, and out of improvement rates. Provision, in this instance, is made for the accommodation of 221 men, 34 single females, and 12 married couples.

In 1855 the Corporation of the city of London contemplated the construction of several large piles of buildings for the occupation of such of the working classes as were ejected from their dwellings in the construction of new streets; but they have done nothing.

It is not necessary for me to notice at length what has been done in Scotland, where, however, exertion, both in the towns and in the country, is quite as much needed as it is in the south. The lack of municipal supervision in Edinburgh was proved very recently by a melancholy catastrophe, which issued in the death of 35 human beings, and brought prominently into view the way in which the poorer population are huddled together in gigantic buildings of seven and eight stories, divided into dwellings of one and two rooms each.

In a paper which I read at the Glasgow meeting of the National Association for the Promotion of Social Science, and which is published in the Transactions of the Association for 1860, a somewhat detailed account is given of numerous blocks of improved or model dwellings which have been constructed in Edinburgh since 1850. In several of these, but very recently finished, the external gallery (supported by cantilevers) and open staircase system has been adopted, and in other instances, where there is only one upper story, the dwellings in that part—for all are arranged in flats—have their approach on the opposite side of the building to that on which the ground floor is entered, and the access to each dwelling is through its own garden. The Pilrig model buildings, near Leith-walk, is an example of this arrangement; there are 44 houses, the cost of which, including drains, was £32 per house, and they pay to the shareholders a dividend of 5 per cent., exclusive of additions to a sinking fund. A spirited association of gentlemen in Glasgow has lately had it in contemplation to expend £20,000 in cutting a new street through the Winds, and improving right and left that wretched property.

The measures for improving the dwellings of the laboring classes, which have, from benevolent motives, been taken by associations on the Continent, and in the North American States, are so distinctly traceable to our own in England, that it would not be right to pass them entirely over in silence.

I have noticed already those adopted at Mulhouse, in Franco, and have alluded incidentally to some others. All that was done in Paris, to the summer of 1855, I have seen, and having conversed on the subject with those most competent to form a correct opinion, feel warranted in saying that the good intentions of the Emperor, in appropriating 10,000,000*fr.* to the encouragement of this object, in the form of a subvention of one-third the outlay, have not, excepting in a few instances, been seconded. Most of those who engaged to any extent in the enterprise appear to have done so exclusively as a commercial speculation, expecting to derive a considerable pecuniary profit, and uninfluenced by benevolent motives. In addition to this unfavorable feature, the leading French societies had a similar misfortune to that which befel one of the earliest established societies in London, through the

* Concluded from page 89.

† The plans given by me for twenty of these cottages have been published by the Laborers' Friend Society, and will be found in the last edition of my Essay on the "Dwellings of the Laboring Classes," fifth thousand.

‡ A copy of this paper is in the library of the Institute, as well as another, on "The Improvement of the Dwellings of the Laboring Classes," read by the author, at the meeting of the same Association, held in Liverpool in 1858.

§ Those who desire to know something of the actual condition of the working-classes in France, will do well to consult a recent work, "L'ouvrière, par Jules Simon."

dishonesty of the then secretary, causing in both instances a very serious discouragement to the work. It is necessary to refer to these adverse occurrences, as they alone will account, in a great measure, for the sudden check which this movement had in both capitals between five and six years since.

Turning to a brighter feature of the case, I mention with pleasure, that when passing through Paris last autumn, it was stated to me, on reliable authority, that a very considerable number of suitably arranged dwellings have been recently built in different directions by private enterprise, and with a return of full 8 per cent. on the outlay. Thus, as in our own experience, private enterprise has proved more successful in a pecuniary point of view than similar work undertaken by societies.

The first society on the Continent to follow the example given in England, is stated by Dr. Huber, who was for some years its secretary, to have been that at Berlin, formed under the patronage of his Majesty the King, to whose enlightened and personal interest in the work I can testify, having on two occasions had the honor of conversing with his Majesty on this subject. At a late meeting of this society, over which his Royal Highness the Prince Frederick William presided, it appeared that the capital embarked is about £34,655, and that there are dwellings for about 219 families and 31 work-shops; the number of occupants being 1,168. The shareholders receive a dividend of 4 per cent. and the available addition to the reserved fund was in one year about £1,195, one half of which was, however, repaid to the tenants. At the same time the annual meeting was held of a kindred, but smaller, society, called the "Alexandra Stiftung," by desire of the Emperor Nicholas of Russia, who, at its formation in 1852, gave 1,000 ducats to the funds. They amounted, in 1858, to about £21,358, partly arising out of donations and partly from loans at 4 per cent.

With an express view to the construction of suitable dwellings for the working classes in St. Petersburg, where they are greatly needed, an architect was deputed to visit London about three years since, and a large number of such houses have been built by a company formed for that purpose.

At Frankfurt, a society formed on a strictly commercial principle, to supply a want greatly felt in that city, is now in successful operation, under the guidance of its energetic and philanthropic promoter Dr. Vancuttrapp, who visited England eighteen months ago to obtain information on the subject.

More recently, a gentleman from Bremen has been to me for advice in regard to the carrying out of an extensive undertaking, which contemplates the building a very large number of workmen's houses on church property, without the city. The remarkably favorable terms required for the ground, and the unusually low rate of interest sought for by the projectors, prove the earnestness of all engaged in this good cause, and how really anxious they are to meet the necessities of a case, which is here seen to be, as it is in reality everywhere else, most intimately connected with the well being of the masses of the population. The study of this example might be profitable to some in our own country.

The usual rate of interest which is sought from such undertakings on the Continent appears to be 4 per cent., with a small sinking fund for paying off the capital. In some few instances it is 5 per cent., and the opportunity is frequently afforded the tenants of becoming the owners of their own dwellings, by a gradual payment, in addition to the rent—a system which renders the dwelling a saving bank, and has been found greatly to stimulate habits of forethought and sobriety.

Much time would be occupied were I to enter on any detailed account of what has been done for this object in other countries besides those which have been named already. The movement has extended to Sweden, to Amsterdam, and to other towns in Holland; to Belgium,* where enlightened views on the subject have been advocated in two International Congresses, held under the patronage of the King and the royal Princes. In Bavaria, and in several of the minor German states; in many parts of Switzerland, and in Italy, where one of the earliest and most suitably arranged piles of model dwellings is that at Florence, which accommodates 100 families. How greatly sanitary improvements have long been needed in most parts of Italy, many of my auditors can testify, whose first recollections of Rome and Naples are of a more recent date than mine, which go back to 1828-29. When I was at Genoa in 1856, its chief magistrate told me that the municipality had there been put to an expense of £500,000 sterling during the recent attack of cholera, mainly in relieving those of the population who live in narrow streets and filthy dwellings; and he added, "I can now, from experience, confirm what is stated in the publications you formerly gave me, as to the heavy expense which may be incurred in consequence of a defective sanitary state." It is rejoicing to know that Naples is in this respect greatly benefited by its emancipation from a rule so jealous of the semblance of foreign interference, that our ambassador cautioned me against the attempt to diffuse any of that light which even Cardinal Antonelli had spoken of as being especially needed at Naples.

A periodical which has a wide circulation in the North American States, published much of the paper I read before the Institute in 1850, together with plans of the Streatham-street model houses for families; and since then, partly, no doubt, owing to the great interest taken in this object by the late Mr. Abbott Lawrence, American Minister in London during the Great Exhibition, piles of well-arranged model dwellings for families, five stories high, have been constructed in New York and in Boston. In the former city the return on the capital invested is 4 per cent., and in the latter, 6 per cent., with reference to which it is stated that "the effect of proving that houses for the poor can be built on the best plan for the health and comfort of their inmates, and, at the same time, be good investments of property, is manifest in many private undertakings. Several large houses have been already built on similar plans; old lodging-houses have been in many instances remodelled and otherwise improved."

The measures which have been adopted by individuals, with a view to aid in helping themselves those who need such aid, remain to be noticed. Our most gracious Sovereign has honored by her royal patronage two societies established for this object, and has given substantial proofs of interest in their success; whilst the laborers' dwellings belonging to her Majesty abundantly manifest a kind and thoughtful regard for the welfare of their occupants. These are but some amongst many other illustrative facts which might be added to show that the feelings of the lamented Prince Consort on this subject "are," in the words already quoted, "entirely and warmly shared by her Majesty the Queen."

Much has been done towards a fulfilment of the desire so happily expressed by an ancestor of our gracious Sovereign, "That a Bible should be placed in the dwellings of all his subjects," and we rejoice at it; but who that knows the actual state of vast numbers of those dwellings can be unaware of the obstacles they present to the profitable reading of that book, and to the embodiment of its holy precepts in the daily life of their occupants?

I have briefly stated some of the efforts made of late for the removal of obstacles which impede alike the physical, the moral, and the religious improvement of the masses of the people, and have endeavored to point out the practical means which are calculated, through their extensive adoption, to extend more widely the benefits of a healthy dwelling to our laboring population.

It is my conviction that the feeling of a weighty responsibility, which rests, much more extensively on the upper and middle classes in regard to this matter than is generally admitted, needs to be pressed home and brought into more active operation than it has hitherto been.

With this view I desire to urge on all the example of that truly great and excellent Prince, whose irreparable loss must be long and deeply felt in every branch of effort connected with the objects of social science. And it is with the earnest hope of encouraging and stimulating many to follow in a path which has been trodden by one so illustrious, that I bring before you some of the many and wide-spread results traceable to a single manifestation of the great interest felt by his late Royal Highness in the subject under consideration.

The Commissioners for the Exhibition of 1851 having replied to an urgent application made for a site, "that a model lodging-house does not come within the design of the Exhibition," a memorial on the subject was presented to his late Royal Highness, who immediately expressed the most lively interest in the project, and a desire that the contemplated model houses should be constructed on his own account, which was done, under my direction as honorary architect. With much personal trouble to the Prince, the requisite official consents of four Government departments were obtained, for placing the

houses in the Cavalry Barrack yard, opposite to the Exhibition. An objection to this was made by the Commander-in-Chief the Duke of Wellington, lest they should give rise to a feeling of dissatisfaction in the army with the want of any accommodation for married soldiers; an evil which his Grace apprehended the country to be then unprepared to remedy. I notice this fact in order to show how clearly their effects were foreseen by the great Duke, and how speedily good results arose out of their construction. Within twelve months after the Exhibition, a large and well-arranged lodging-house for married soldiers was commenced near the Vauxhall-bridge-road, by an association of officers of the Battalion of Guards.

The benefits resulting from this first essay soon led the Minister of War to commence building separate dwellings for the married non-commissioned officers and men at the Chatham Garrison; and a grant of £30,000 has been recently made by Parliament for carrying out the same object elsewhere, at the instigation of that great friend to the soldier and I may add also, to the laborer, the lamented Lord Herbert. In a note, dated as recently as April last, that distinguished example of sacrifice to self-denying duty expressed to me his "hope of seeing a great change in the next few years in the dwellings of the rural population." I mention this as an additional call to zealous effort in the good work, for "the night cometh wherein no man can work."

Amongst the number of visitors to these model houses, amounting to upwards of 250,000, many gave evidence of their having duly appreciated the object for which they were placed in the Exhibition, viz., the conveying practical information, calculated to promote the much needed improvement of the dwellings of the working classes, and also of stimulating those whose position and circumstances enable them to carry out similar undertakings, and thus, without pecuniary sacrifice, permanently to benefit those who are greatly dependent on others for their home and family comforts. The building was adapted for the occupation of four families of the class of manufacturing and mechanical operatives who usually reside in towns, or in their immediate vicinity,—those, in fact, by whose labor the larger portion of the objects in the Exhibition had been produced. The open staircase and gallery, giving access to the upper-floor tenements, were prominent features in the arrangement of these dwellings, and their subsequent adoption in buildings constructed for working people in towns has come under my notice in Edinburgh, at Liverpool, Ramsgate, Brighton, Windsor, and other places, as well as in London and on the Continent. The example which may, perhaps, be pointed to in London as bearing the closest resemblance to the original structure, and as fully answering in a pecuniary point of view, is at Shadwell, close to the line of the Blackwall Railway, where a number of miserable dwellings, tenanted by the lowest class of persons, came by inheritance into the possession of a private gentleman, W. E. Hilliard, Esq., of Gray's Inn. Actuated by the most philanthropic views, he decided on endeavouring to improve, not only his own property, but also by example the immediate neighbourhood; and his efforts have been crowned with signal success. The old dwellings have been replaced by an entire street of considerable length; on both sides of which houses for accommodating in the whole 112 families have been built, on the general plan of the Prince Consort's Exhibition model houses, with an open staircase, giving access to each pair of upper-floor tenements. The twenty-eight blocks of four houses cost £187 each; and, after allowing for ground-rent and all charges, I can state, on the authority of the owner, that "they continue to pay upwards of 6, in fact nearly 7 per cent. as a net return on the investment; and what," he adds, "is, perhaps, of more consequence, they are almost constantly let, and are appreciated by the tenants, who, as a rule, are pretty stationary, and not migratory, as that class frequently are."

Scarcely any foreigners who visited the Exhibition of 1851 returned without examining the Prince's model houses, and but few left without carrying back to their several countries some of the publications bearing on the improvement of the dwellings of the laboring classes, which were there abundantly distributed. My own opportunities of judging of the effect of this little structure enable me to say that it gave to the movement an impulse such as it has not received from any other single effort, and the results of which have spread far and wide. The descriptive account of the building was translated into German and published at Berlin, much of it also appeared in French.

The collection of sanitary and other appliances adapted to the circumstances of the working classes, which occupied part of the cottages, was the first public exhibition of the kind, and which I had hoped to see continued and increased, when, at the close of the Exhibition, the building was removed to Kensington-park, under the charge of the Office of the Woods and Forests; a proposal with that view having been made to the Chief Commissioner, Lord Seymour. The practical value of such a collection was recognised at the Congrès Général d'Hygiène, held in Brussels in 1852, where, on my proposal, "the utility of establishing in each country, and also in the principal centres of the population, a collection as complete as possible—a kind of museum where shall be gathered together models, plans, specimens of materials, &c., relating to hygienic amelioration and progress," was unanimously declared.

The Economical Museum, formed by my worthy friend Mr. Twining, at Twickenham, is an expansion of the same idea.

Amongst the other numerous instances of individual effort which might be given, I shall only notice—

1st. The building in Lambeth, on the property of his Royal Highness the Prince of Wales, as Duke of Lancaster—a range of model dwellings for families, with shops on the ground floor, at a cost of £16,000. The close proximity of extensive gas works has, I regret to say, impeded that full occupation which is almost invariable in such buildings elsewhere.

2nd. The establishment, by Lord Kinnaird, in Peter-street, Westminster, of some of the earliest renovated model lodging-houses, and his promotion of similar houses in Dundee. In the latter case, the original outlay, as well as the interest thereon, has mostly been paid out of the profits. Although the beneficial operation of the Lodging-house Act has tended to diminish, in some measure, the great necessity for such houses, the adoption of a suggestion made to me by Lord Kinnaird, would doubtless prove of great service to those of the working-classes who migrate in search of employment. It is, that "every town ought to have a model lodging-house, with notice thereof stuck up at the different railway stations."

3rd. Miss Burdett Coutts has contributed in various ways to the object under consideration, the most important of which is the building, under the direction of Mr. H. A. Darbisher, a considerable range of dwellings for working people in Bethnal-green, one of the poorest parts of the metropolis. In the upper part of this structure, which is four stories high, a covered area for exercise, and a play place for children, as well as a laundry, are provided.

4th. The five piles of family dwellings,† built by Mr. John Newson, in different parts of the metropolis, although susceptible of improvement in some of their details, deserve to be mentioned, on account of the striking contrast which they present to the dwellings generally occupied by the working classes in London. They accommodate 125 families, and have cost £13,200. The annual gross receipts are £1,500, the ground-rent, taxes, current expenses, and repairs average £830, which leaves a net return of about 5½ per cent. on the outlay. All these buildings are arranged with open galleries, resembling, in that respect, the Streatham-street and the Prince's Exhibition model-houses, which renders them exempt from house duty, each tenement so approached having been pronounced by the Judges to be a separate house in regard to taxation. One important recommendation of this system, besides that of its healthful tendency, from the free circulation of air, and the distinctness of the tenements.

The scope of my paper will only admit a passing remark with reference to Benefit Building Societies,‡ of which Mr. Tidd Pratt stated recently that there exist 2,000 with a paid up capital of £8,000,000. A machinery so extensive, and having such resources, might, if well directed, accomplish much for the object under consideration; but it is to be feared

* This point was justly held by H.R.H. to be of primary importance to the adequate extension of the work. The detailed estimated cost of the model block of four houses was £458 2s. 6d.

† Two of them are in Grosvenor-mews, near Berkeley-square, one in Bull Head-court, King-street, Snow-hill, and another is the Bull Inn-chambers, Holborn-hill.

‡ Those who may desire information as to the working of some of these societies, will find an account of the origin and progress of four such associations in Yorkshire, given in a paper read by Mr. J. A. Bains at the Bradford meeting for Social Science, and published in the Transactions of the National Association for 1859.

* The Belgian Government has published an instructive series of resolutions on the construction of dwellings, which was drawn up and adopted at the meeting of the Congrès Général d'Hygiène, held in Brussels in 1852.

that many of the houses built in connexion with these societies are inconsistent with a healthy and convenient dwelling. This evil, which has been pointed out to me by the late eminent Dr. Southwood Smith, and other sanitary reformers, would probably be most effectually remedied by the circulation of sound views on the subject, through the medium of Mechanics' Institutions and kindred associations. Here is a fruitful field for individual effort, in the cultivation of which much assistance might be derived from the exhibition of suitable plans for the dwellings of working people, as well as from small collections of domestic appliances conducive to health and comfort.

The nucleus of such a collection was formed under my direction at the office of the Laborer's Friend Society more than twelve years since, and the idea was carried out, as already noticed, on a very small scale in the Prince's Exhibition Model Houses, 1851, as well as in the compartment belonging to the Laborer's Friend Society in the Exhibition itself.

Experience having shown me the great necessity for a general diffusion of sanitary knowledge, I was led to follow up the declarative resolution, in regard to the establishment of illustrative museums, already referred to, as having been adopted at the Congrès d'Hygiène in 1852, by proposing at the Congrès International de l'Enseignement, held in Brussels in 1856, the following resolution: "The Congress declares that it is of public utility that the working classes be enlightened by all possible means in regard to the improvement and keeping of their houses in good order. It declares that the instruction of the young in the laboring classes ought to comprise all which relates to the benefits resulting from good ventilation, and the evils resulting from bad air. Lastly, it thinks that the study of the science of preserving health is one which ought to be rendered accessible to all." The unanimous adoption of this resolution by the representatives of upwards of 20 different countries, recognised the wide-spread extent of the ignorance referred to, as well as the serious nature of the evils resulting therefrom.

Amongst individual efforts for promoting the object under consideration, the prominence given to it as an object of vital importance, in public addresses by many distinguished statesmen, ought not to be forgotten; those of Lord Palmerston have justly carried with them all the weight and high official influence of Prime Minister.

Within the last five years many Ladies have directed their zealous efforts to objects which tend in various ways to domestic improvement. The Ladies' Sanitary Association, the Female Domestic Mission, connected with Bible colportage, and Meetings for the Instruction of Mothers, exercise a highly beneficial influence in this respect.

Notwithstanding, however, all our recent ameliorations, it is a well-ascertained fact that tens of thousands of human lives are sacrificed annually in Great Britain through ignorance and the culpable neglect of means within our own power. But, owing to the noiseless and almost imperceptible way in which such multitudes are carried off by preventable diseases and their homes desolated, we witness no manifestation of the practical sympathy so justly shown by the public, when, through some lamentable accident, a score, or perhaps hundreds, are suddenly deprived of life, and their families of the means of subsistence.

When recommending sanitary ameliorations to influential persons on the Continent, the misery and degradation in which vast masses of our fellow subjects are sunk, owing, in a great measure, to their domesticity state, has been so often pointed at as a reproach to England, that the words "Physician, heal thyself" have frequently occurred to my mind, as a call to renewed exertion for this object.

And now, in conclusion, if the remarks offered and the facts stated have tended to show that it is not through the exclusive adoption of any one of the means which have been pointed out, nor by any infallible specific, that the benefits of a healthy dwelling can be extended to all classes of the working population, I yet entertain a sanguine hope that through the general and earnest adoption of a combination of suitable measures, existing evils will be greatly mitigated, if not entirely rooted out. Such an expectation is warranted by the well-known results of the improvements in our prisons, which are no longer hotbeds of fever and of moral contagion as they formerly were. Whilst the ameliorations very recently introduced in our military barracks and hospitals have led to a diminution by one-half in the mortality of their inmates, as was lately stated by the Chancellor of the Exchequer.

Encouraging facts like these should stimulate all to exertion in their various spheres of action, in order that the laboring population may, to apply the words of his Royal Highness the lamented Prince Consort, adopted for my motto, participate "in the blessings bestowed on us by the Almighty," but which, in their case, "can only be realised in proportion to the help which we are prepared to render to them."

LIVERPOOL ARCHITECTURAL SOCIETY.

THE ninth meeting of the present session was held at the Royal Institution, the President, Mr. J. M. HAY, in the chair. The usual donations were announced by the Secretary, Mr. W. H. PICTON, who also directed attention to specimens of enamelled tiles presented to the museum at the Free Public Library, by Captain Anderson, of the steamship *Europa*. They had been brought from a pagoda at Pekin. It was supposed that they formed part of the celebrated porcelain tower, erected 500 or 600 years ago, but lately destroyed. The production of these specimens evoked a discussion as to the desirability of using absorbent or non-absorbent materials in the erection of buildings, the general opinion being in favor of absorbent materials.

The paper for the evening was "Notes on a Recent Visit to Normandy," by Mr. J. A. PICTON. Having apologised for his absence on a former occasion, when he was announced to read a paper to the Society, stating that he was prevented doing so by a serious illness, Mr. PICTON intimated that he was not prepared to give them an elaborate disquisition. He would merely give them the result of his observations just as he jotted them down whilst on a short tour through that strange country, Normandy; he had not had time to write them out at length. He then proceeded to give some details respecting the architectural features of the principal churches he inspected on his route, the general aspect of the localities in which they are situated, &c. The peculiarities of the styles of the various edifices were also pointed out.

THE PROGRESS OF TELEGRAPHY.—At a dinner given in Liverpool, to Sir Charles Bright, of the Magnetic Telegraph Company, Sir Charles, in his speech, made some interesting statements referring to the progress of telegraphy in this country. Ten years ago, he says, the Company's staff did not exceed a score of people, now it amounted to about 1,500. At that time there was only one telegraph in the country, now the mileage was computed at 15,000. The total amount received for telegraphic messages in this country in a year amounted to the enormous sum of £350,000. The Government line between Malta and Alexandria, Sir Charles said, produces a revenue of £600 a week.

TEMPLE BRIDGE COMPANY.—The prospectus of the Temple-bridge Company has appeared, proposing to erect a suspension bridge of three spans of 300 feet each across the Thames between Essex-street, Strand, and Princes-street, Upper Stamford-street, Borough. The capital is to be £70,000, with borrowing powers for £20,000. The contractors of the Lambeth-bridge are prepared to contract for the erection of the Temple-bridge for £45,000, taking one-third in shares. It is expected that the traffic will be little below that of Waterloo-bridge, which in 1861 was £22,000, but should it amount to only one-half of that sum, it will yield a return of 12½ per cent. per annum on the capital of the company.

THE JENNER STATUE.—The statue of Dr. Jenner has been removed to Kensington-gardens. It is placed on a pedestal in the vicinity of the bridge spanning the Serpentine, on the Bayswater side. This statue, it will be remembered, was some time ago placed near the Nelson Column in Trafalgar-square.

REMOVAL OF ST. THOMAS'S HOSPITAL.

A CORRESPONDENT desires to point out the advantages that "must accrue" by the removal of St. Thomas's Hospital from its present position to that of a more suitable site at Lewisham, both in a social or commercial point of view.

It is said the site in question is one of the most stately in the south of London, and the district of Lewisham is proverbial as the healthiest in the great metropolis. The estate has a gravelly soil, and is situate about 60 feet above the high road, on the apex of a hill, contiguous to that of Blackheath, and commanding lovely scenery; the air, light and bracing, is of the purest, and free from the smoke of London or neighbouring factories, and will tend materially to the rapid restoration of the convalescent patients.

It is mentioned that the rate of mortality for 1,000 in Southwark is 33, whilst that of Lewisham is 17 in 1,000, or about one-half.

THE STEAM REGENERATOR.

LAST Saturday a large number of gentlemen connected with the press and engineering science attended at Collinge's Patent Axle Works, Westminster-road, for the purpose of inspecting a "steam regenerator," perfected by the joint labors of Mr. Imray and MM. Pigua and Datchy, and lately attached to the steam-engine in that establishment.

The object of the apparatus is to condense and again employ the steam after it has acted on the piston. This is effected by conducting it into an iron chamber, over the outside of which a stream of cold water is constantly flowing; it is there condensed into water, still at a high temperature, and in that state is pumped into a chamber in connexion with the boiler, where, being again converted into steam, it passes into the boiler itself.

The inventors say that, by constantly employing the same steam, the feed-water, which usually exceeds 25 gallons daily per horse-power, is reduced to less than one quart daily, a quantity required only to make up for the unavoidable leakages at joints, packings, and valves; there is thus a saving of more than 99 per cent. on the feed-water, and a consequent reduction of boiler surface and capacity. That, no cold water being thrown into the boiler, and all the feed-water being perfectly pure and distilled by its continual circulation, there can be no sudden changes of temperature, and no deposit or incrustation. And that, from the reduction of the quantity of feed-water, from the increase of effective steam-pressure caused by the vacuum formed in the receiver, and from the complete prevention of deposit and incrustation in the boiler, there results a proportionate saving of fuel—a saving which amounts to 50 per cent. for high, and 32 per cent. for low-pressure engines.

The experiments showed that, with the apparatus attached to the engine, the strokes of the piston were 50 per minute, while, with the apparatus detached and the steam blowing off, the revolutions were reduced to 30 per minute.

LIGHTING RAILWAY TRAINS.—Mr. Newall has recently applied to several of the passenger trains of the Lancashire and Yorkshire Company his method of lighting railway carriages with gas. The trains to which these lights have been applied include the fast trains between Manchester and Bradford, and Manchester and Blackpool. The London and North-Western Company are about to avail themselves of this mode of lighting some of their fast trains, and among others to the limited express between London and Holyhead. Mr. Newall is now fitting up carriages for the last-named train at Bury. By means of compression by hydraulic power the quantity of gas required for one of these trains is contained in a box of small size in the guard's van, and the advantage derived from these lights by the passengers are spoken of in high terms. As an improvement upon the lamp at present used in railway carriages, and in which the supply of oil to the wick is regulated by a bird-fountain. Mr. Alexander Allan, in a paper read before the Institute of Engineers in Scotland lately, proposed the dip-pipe fountain lamp, which he states will maintain the oil in the burner dish at a constant and invariable level, thus insuring the uniform saturation of the wick, and a steady flame under all circumstances. Mr. Allan uses in connexion with the lamp fountain a tube, which is inserted through the filling screw, and descends down the fountain and oil tube to the level at which it is desired to maintain the oil in the burner dish. Whenever the surface of the oil in the dish falls below the level of the lower end of the dip-pipe, the surface also falls below the bottom of the dip-pipe, and a bubble of air passes from the latter, and rises to the surface of the oil in the fountain, liberating exactly as much as and no more than will restore the true level in the dish, and this action will continue so long as there is waste by burning, and until the oil is exhausted.

CO-OPERATIVE OIL AND COLOR SOCIETY.—It is being endeavored to form a company for the purpose of manufacturing and supplying "genuine white and red lead, zinc, paints, and colors of all descriptions, ground and dry, mixed paints ready for use, wood stain, unadulterated, raw, boiled and refined linseed, and all other oils used for burning and painting, and every article requisite for the oilmen and painters' trade. Also to lease or purchase manufacturing premises, and erect machinery for grinding and pressing the raw materials into the different products, and sell the same at a trade price to the shareholders of the society or company at a month's credit." In a copious list of those whom it is presumed will apply for shares are ship chandlers, oil and colormen, country ironmongers, chemists, grocers, and—architects!

WOOD FOR SHIPBUILDING.—Professor Craze Calvert is now making an investigation for the Admiralty of different kinds of wood used in shipbuilding. It appears that the Professor is at no loss to explain why so many of the fleet of recently-built gunboats became rotten and others escaped untouched. He finds the goodness of teak to consist in the fact that it is highly charged with caoutchouc; and that, if the tannin be soaked out of a block of oak, it may then be impregnated by a solution of caoutchouc, and thereby rendered as lasting as teak. A few years ago an enterprising individual spent £30,000 in trying to introduce a new wood for shipbuilding purposes from South America, where it is known by the name of Santa Maria, but the dockyard authorities could not be persuaded to take it into use, and the imports were entirely neglected. This is one of the specimens investigated by the Manchester professor; and he finds it to be sound and resinous, and but little inferior to teak. Of the durability of teak there can be no question.—*Engineer*.

* Our readers are requested to correct, in the last Number of the BUILDING NEWS, at page 88, the following error in the note. The first item of net amount should be £295 0s. 10d., instead of £293 0s. 10d.

CHURCH, CHAPEL, AND SCHOOL BUILDING.

St. Paul's, Hooton, Cheshire.—This building, erected at the sole expense of Mr. R. C. Naylor, of Hooton, has just been consecrated. The edifice consists of a nave and chancel, with transepts surmounted by a lantern at the intersection. The nave has side aisles; and the chancel, terminated by a semicircular apse, is surrounded by an ambulatory. The central lantern rises on a square above the four central pillars, chamfered off into an octagonal base supporting the lantern, which is crowned by a pyramidal spire. From the western extremity of the chancel, on the south side, a small open arched cloister projects, over the south end of which there rises an open arched belfry bearing a figure of St. Paul as its finial. This is the private entrance from Hooton-hall, and beneath it is built the family burying vault. On the side of the chancel, opposite to the private entrance, is a small vestry. Exteriorly the church is substantial and plain rather than elaborately enriched; but some effect has been obtained by the arrangement of the stone of which it has been built. One of these is the Stourton stone, of a warmish grey color; the other is a dark red stone, got from quarries on the Hooton estate, near Eastham. The window and door dressings, and the window shafts, are of Hooton stone, with the exception of a band or two of Stourton stone, the external pillar shafts are of Hooton, and the capitals of Stourton. At the central tower Mr. Colling has crowned the intersection by a hemispherical dome, constructed alternately of courses of red and grey stone. The eastern or altar windows are small in size, in accordance with the general style of the architecture, and three in number. They are filled in with stained glass, the centre one representative of the Crucifixion; the northern, Christ Bearing his Cross; and, the southern, the Descent from the Cross. The ambulatory, already spoken of, is cut off from the chancel by a double row of slender pillars, whose shafts are of polished Peterhead granite, supporting semicircular arches, carried round the chancel, on which rests its main wall. The chancel is fitted with open pews of oak. The altar itself is massive, and almost destitute of ornamentation. Abutting on the north-east column of the central tower is placed the pulpit, cut from a square block of Caen stone, highly ornamented, an angel's bust, sculptured in relief on the west front, supports the book board. In the west front of the base of the south-east column is sunk a brass plate, on which is engraved in mediæval characters:—"Gloria in excelsis Deo." This church, dedicated to the Apostle St. Paul, was erected by Richard Christopher Naylor and Mary Sophia, his wife. This stone was laid by them on the 5th day of October, in the year of our Lord MDCCCLXIII., and the 21st year of the reign of Her Majesty Queen Victoria. James Kellaway Colling, architect; Samuel Hild Holme and John Nicol, builders." The side aisles are divided from the nave by a range of short massive columns, with shafts of polished Peterhead granite, supporting on semicircular arches the main wall of the edifice, which, like all the other portions of the interior walls, are composed of alternate courses of the red and grey stone. Above the western window is a wheel window, filled in with stained glass, by Clayton and Bell. The nave is seated with open benches, of stained and varnished pitch pine. The floors are laid with encaustic tiles. The capitals of all the columns in the interior are of Caen stone with natural foliage. The font is of Cornish serpentine, polished, and elaborately carved outside in diaper work. The bowl is supported on a cluster of five columns. This font is one to which a medal was awarded at the Great Exhibition of 1851, and was purchased by Mr. Naylor to be put up in the church. The church is supplied with heating apparatus, and is seated to accommodate about 300 persons, besides the children attending the schools, who are accommodated in the ambulatory on the north side of the altar. In total length from west to east it measures 105 feet. Its width across the transepts is 52 feet. The width of both the nave and the chancel is the same, namely, 19 feet; and the aisles on each side are 8 feet wide. The total height of the lantern is 95 feet. Mr. J. K. Colling was the architect, and Holme and Nicol, of Liverpool, the contractors.

Leicester.—St. John's Church.—The circular window at the west end of this church was filled last week with stained glass, in memory of the late Mr. W. Hardy. In the centre of the window is an Agnus Dei, surrounded by a circle of adoring angels bearing various musical instruments. One of the angels holds a scroll inscribed with the words, "Dignus est Agnus qui occisus" (Worthy is the Lamb that was slain). The rest of the window is filled with a diaper pattern executed in warm colors on a groundwork of grisaille. Mr. Wailes is the artist.

Nailsea Old Church.—The parish church of Nailsea, near Bristol, whose original construction dates back five centuries, and which had fallen into a most lamentable state of dilapidation and decay, has, during the last twelve months, been undergoing renovation and restoration. The church, which has the characteristic Somersetshire tower, consists of a nave and south aisle, and is dedicated to the Holy Trinity. The edifice has been partially restored on many previous occasions, and the oak roof and south aisle, which have been allowed to remain, bear date about 1700. The unsightly gallery in the south aisle has been removed. All the existing windows are new, and the stained glass which was scattered through them has been collected and placed in one of the east windows. A new open stained deal roof has been put up in the chancel. The walls have been replastered, and during the process a priest's door, which had been concealed from view, was discovered in the chancel. The roof of the church has been re-slatted. The entire cost of the work has been about £1,000. The work has been executed under the direction of Messrs. Fripp and Co., architects, of Bristol, by Mr. Robert Newton, of Nailsea. The glass was provided by Mr. Bell, of Bristol.

Rochester.—St. Nicholas' Church.—The works in connexion with the rearrangement of the interior of St. Nicholas' Church, and the alterations and additions made to that edifice are in such a forward state that in a few weeks the whole will be completed. The whole of the pews, some of them dating two centuries back, have been swept away, and in their places have been erected open seats. A gallery has also been erected round the church. The alterations effected will provide sitting-room for about 670 persons. A stained-glass memorial window, by C. Gibbs, of Marylebone-road, has been erected at the east end, over the communion table, in place of the small oriel window which formerly lighted that part of the chancel. This window, which is now completed, is divided into several compartments, the centre one of which represents our Saviour raising the widow's son at Nain. The organ has been removed from the western end of the church in order to exhibit a large stained-glass window. The south-west window is also to be filled in with stained glass. The organ will be placed in a gallery especially built for it in the north-west end of the church. —We understand it to be the intention of the Dean and Chapter of the Cathedral to remove some of the old houses in High-street, which belong to the

capitular body, and which now so greatly disfigure that portion of the city, in order to open a new entrance to the cathedral and the deanery. The houses intended to be removed are now all empty, and it is stated that the demolition of the unsightly blocks of buildings will shortly commence.

Higham, Kent.—St. John's.—This new church, dedicated to St. John the Evangelist, is constructed of Kentish rag-stone, with Bath stone dressings and slated roof. It consists of nave, side aisles, tower and spire, and a chancel. There is a vestry-room on the north side of the chancel. It will afford accommodation for about 400. The cost of the building was £2,624. Messrs. Peck and Stephens, of Maidstone, were the architects, and Mr. G. Myers the contractor.

Dublin.—The New Presbyterian Church, Rathgar.—The foundation stone of this church was laid about eighteen months ago. The style of architecture adopted is the decorated Gothic, and the material used is granite, with dressings of Portland stone. The shape of the building is cruciform. There is a ground floor forming a large apartment, which is used as a schoolroom. Above this is the church itself, which is approached by a gradual ascent. The length of the building is about ninety feet, its breadth about sixty, and its height from the ground floor to the roof is fifty-five feet. There are sittings for upwards of 500. Stained glass, in which blue and crimson are the dominant colors, has been freely used, and above the pulpit is a rose window, filled in with stained glass. The roof is formed of open timber, varnished, and supported by pillars which rest upon carved stone corbels. The gallery occupies a portion of the nave facing the pulpit, and is placed immediately over the vestibule. The pulpit stands upon a high platform, which is surrounded by an open balustrade of trefoil arches; underneath is space for the choir. The architect was Mr. Andrew Herton; Messrs. Cockburn were the builders.

Brandon Parva, Norfolk.—The parish church has recently been restored. The old roof has been entirely removed, and a new one constructed, of oak with curved principals and moulded purlins. The windows, buttresses, and stonework have been cleaned off; the walls of the church and chancel stuccoed, and a new south porch built. Plans have also been prepared for the entire re-seating, with new pulpit and reading-desk, which will be carried out as soon as the necessary funds shall have been raised. The present works have been executed by Boardman, of Norwich, under the superintendence of Mr. J. D. Ellis, architect, of that city.

Lincoln Cathedral.—We learn that for some months past the Committee of the Lincoln Diocesan Architectural Society has been in communication with Mr. George Gilbert Scott as to the design for the pulpit about to be presented to the Cathedral as a public testimonial to the Rev. Edward Trollope. At the desire of the Chapter, the pulpit, when finished, will be placed at the eastern end of the northern range of stalls, and immediately in front of the south-western pier of the upper or eastern transept. From a moulded base of Caen stone rises a solid circular pillar, surrounded by six colored marble or granite shafts, with worked capitals; these support a stone capping; upon this the pulpit proper is placed, of a hexagonal form, and of oak, enriched with carvings. At each angle there will rise, upon brackets, figures of the Four Evangelists, placed within ornamented niches, surmounted by canopies, and on the panels between these the subject of "preaching" will be set forth by carvings in high relief inserted within enriched frames or borders—the series comprising Moses, Elijah, John the Baptist, St. Paul, and St. James, in the act of making known the Word of God to man. The whole will be surmounted by carved capping, and a book-rest supported by an angel. There will also be a canopy, of carved oak. The pulpit will be approached by a stone staircase, with a wrought hand-rail of brass work.

CHAPELS.

Hull.—A new Wesleyan chapel was opened on the 16th inst. It has a frontage to the Beverley-road of one hundred and twelve feet, and stands back forty-five feet from the road. The style is Decorated Gothic; all the external walls are faced with the Wallingford white stock bricks, the masonry and other dressings are generally of Brodsworth stone. The Beverley-road elevation is divided by buttresses into three spaces, having a doorway in each, with columns of red Mansfield stone and foliated capitals. There is on each side of the central doorway a two-light window, the hood mouldings of which are united with those of the doorway, and rise triangularly from carved terminations, forming three small gables, with finials. Above the central doorway is a five-light moulded window, with tracery head, running up into the roof gable; and above each of the side doorways is a two-light window. Octagonal pinnacles rise from the principal buttresses, and square pinnacles from the heads of the side buttresses. The gable is surmounted by an octagonal turret, with two stages of arches, and a small spire, the projection before the face of the wall resting upon a moulded and carved corbel. In the front of the chapel is a wing on each side for the gallery staircases, and the flanks of the building are divided by buttresses into bays, with two tiers of tracery windows. The eaves are finished with an iron gutter, resting on stone blocks. The roof is covered with Westmoreland slates, having an ornamental tile crest on the ridge, and louvred ventilating gables on each side. The windows are glazed with Hartley's patent quarry glass. The pulpit is placed in the centre, near to the end of the chapel. It is octagonal in form, resting upon a pedestal, with tracery panels on the sides and circular shafts at the angles, with carved capitals and trefoil arches. There is a gallery on two sides and one end of the chapel, supported on clustered iron columns. The plan of the chapel is a parallelogram, 90 feet in length by 54 feet in width. The side walls are 32 feet in height from the floor of the chapel, which is two feet above the level of the finished ground on the outside. The roof of the main building is in one span, the framed principals of which have curved wall braces springing from moulded and carved corbels. The ceiling is of lower pitch than the roof, and rises from the side walls at an angle of about 30 degrees, being in the centre 45 feet from the floor of the chapel. It is divided by moulded ribs into panels, colored blue. At the rear of the chapel are a vestries, and class-rooms. The whole of the interior woodwork (with the exception of communion rail and handrails to staircases, which are of oak) is executed in red fir, stained and varnished. The lighting of the chapel is by ten corone of mediæval design, suspended from the intersection of the ceiling timbers, and by brackets of similar design from the walls under the galleries. The heating is by the patent gill air-warmer, placed in a vault at the rear of the building. Ventilation is secured by means of perforated zinc panels in the ceiling, with a simple apparatus for regulating the same at pleasure, and by air flues with valves carried up in the side walls, opening near the gas burners under

the galleries. The heated air is carried off from the space above the ceiling by the louvered gables. The sitting accommodation is for 1,150 persons, 550 of which are on the floor of the chapel, and 600 in the galleries. The amount of the contracts, including lighting, heating, and fencing, was about £5,600, and the cost of the site about £1,200. The works have been executed by several contractors. The excavators', bricklayers', and plasterers' work by R. Bailey; the masons' work by Simpson and Malone; the carpenters' and joiners' work by James Jackson; the plumbers' and glaziers' work by P. T. Harrison; the slating by Dawber and Son; the iron work by Pearson, Dannatt, Kruger and Co.; the painting, staining, and varnishing by W. Wardale; the gas-pipes by Stones, Settle, and Wilkinson, all of Hull; the gas-fittings by T. Brawn, of Birmingham; and the heating apparatus by Stuart and Smith, of Sheffield. Mr. W. Botterill, of Hull, is the architect, Mr. C. Pulman having acted as clerk of the works.

Tunstall.—*New Independent Chapel.*—This building, which is situate in High-street, has been erected from the designs of Mr. Edwin Boon, of Burslem, and is of a mixed style of architecture, the dimensions being 56 feet by 36 feet. A transept forms the chapel, capable of seating 325 persons, and the wings at each end constitute the schools, which are adapted so as to open to the chapel. Galleries are placed over the class-rooms. The total accommodation will be 625 sittings. The builders were Messrs. Cawley and Curran, of Tunstall; the total cost of the building, including heating apparatus, gas fittings, &c., is £500.

SCHOOLS.

Manchester.—The extension of the school for the deaf and dumb, Old Trafford, is now completed. The additions consisted in extending the back part of the building 24 feet for a printing office, additional play-room, sewing-room, and assistants' room, and also to increase the size of the school-room and dormitories, now making each 77 feet 6 inches by 27 feet 6 inches. The object in view was, not to accommodate a larger number of pupils, but to give more space to the existing inmates, with a freer circulation of air. This has been accomplished by a system of ventilating shafts round the rooms conducted into flues, the air of which is rarefied by the heat of a smoke shaft adjoining. The dormitories have louvres placed in the roofs, and the cubical space for each individual has been increased from 430 feet to 630 feet (still below the mark). Messrs. Southens, of Salford, were the builders, their estimate being £1,120, whereof £40 was deducted for old materials. Mr. James Redford, of Manchester, was the architect.

Stapleton.—*New Culston's Schools.*—These school buildings have been arranged for the reception of 120 boys. The buildings contain on the ground floor three school-rooms, about 32 feet by 24 feet each, besides two smaller class-rooms, a chapel, a spacious entrance-hall with stone staircase, a dining and examination hall, 65 feet by 31 feet, and 18 feet high, with a spacious vestibule leading to the play-ground; usher's sitting-room, surgery, consulting-room, and the usual domestic offices, with bed-rooms for servants over the latter, and communication therewith. On the first and second floors are the boys' dormitories, ushers' sleeping-rooms, sick wards, wardrobes, store-rooms, &c., and on the basement floor the boys' lavatory, shoe-rooms, bath-rooms, and dressing-room, &c. At the extremity of the new dining-hall, and communicating therewith, a new residence for the master has been erected, containing entrance-hall, two parlors, study, three bed-rooms, dressing-rooms, store-rooms, &c. The works have been executed by Lewis and Sons, of Clifton, under the superintendence of Messrs. Fosters and Wood, of Bristol, architects to the trustees. The entire cost of the alterations has been under £3,000.

Caverswall, Staffordshire.—New school-rooms have been erected at this place. The buildings consist of a room 40 feet by 18 feet, an infant school-room, 27 feet by 18 feet, and a residence for the teacher. The materials are red brick intermixed with blue, with stone mullions, and dressings for the windows. The roof is open, of pine, stained and varnished. The erection of the building was commenced in July, and the children assembled for the first time on the 5th of January. Mr. Dain, of Burslem, was the architect, and Collis and Hudson, of Longton, the builders.

Long Ashton National Schools.—This building is in the Early Decorated style, of Nailsea pennant stone, with freestone dressings, and comprises a dwelling-house for the master and mistress; a boys' school, 50 feet by 20 feet, able to accommodate 100 boys; a girls' school, 46 feet by 18 feet; to each school is attached a class-room. The boys' school is surmounted by a bell-turret, supported by four polished Purbeck columns, with carved capitals; underneath will be fixed a large dial. The work has been carried out by E. and J. Tucker, builders, of Long Ashton. The cost of the building was £2,200. Mr. James Wilson, F.S.A., of Bath, is the architect.

Reviews.

The Historical Finger-Post or Handy Book of Terms, Phrases, Epithets, Cognomens, Allusions, &c., in Connection with Universal History. By EDWARD SHELTON. 8vo. Lockwood and Co. pp. 376.

THIS is one of those epitomes of knowledge so popular in these days, when every one affects to be "well read." Books of this class save a world of trouble, there is no doubt, but it is very much to be doubted if they tend in any way to the advancement of sound education, the temptation to rely on their aid is so great to lazy memories, that it must result in the neglect of more studious reading, which can alone give the real historical connexion between the disjointed facts which it has been the custom to crowd into "Handy Books."

To those, however, who possess but a superficial acquaintance with historical events, the book before us will be of use, so long as they do not entirely rely on it to supply deficient knowledge, which, at the best, it can but partially do. It is offered as aid to those readers of general literature who find it impossible to take up a newspaper, periodical, or an ordinary volume, without meeting with allusions of an historical character, which may have never been met with before, or which have been forgotten.

The allusions and phrases are divided into classes, and are easily found on referring to a very copious index. The work is not quite so free from errors as might be wished, but will, within proper limits, be found of assistance to the particular, and, perhaps, large, class of readers to whom it is addressed.

NOTES FROM THE PROVINCES.

Cliff Town, Southend.—A new town is rapidly rising to the westward of, and quite distinct from, Southend. The houses are built of white brick, with freestone dressings. They are constructed in terraces laid out on the summit of the cliff, connected diagonally at intervals in such a way that those lying back get sea views in one direction. The front basement and parlors have bay windows; the first floor is fitted with French casements, opening on to a slate balcony, formed on the top of the bay window. The houses are of various classes, differing in size, in position, and in rental. The row facing the sea consists of twelve fourteen-roomed houses, surrounded by gardens; forty-five are ten-roomed houses, laid out in six terraces, having gardens; twenty-seven laid out in three terraces, contain seven rooms; and thirty-two six rooms, also forming six distinct terraces. In addition to the above there is a row of eight houses, built as shops, containing ten rooms and two store-rooms. The rental of the private houses varies from £60 a year for the first-class down to £20 for the smallest. The spaces between the rows of houses are turfed and planted out with trees and shrubs. Cliff Town was erected by Messrs. Lucas Brothers, Mr. W. Mitchell being clerk of the works. Very few of the houses are unoccupied, and the experiment is said to be so successful, that it is in contemplation to increase the number, and to add a church, an hotel, and a library and reading-room.

Improvement of Rochester.—A meeting of the Estate Committee of the Corporation has been held, to take into consideration the erection of the new town quay, the plans and drawings for which were laid before the committee by Mr. Andrews, the city architect. The new quay will occupy, as nearly as possible, the site of the old town quay, which was taken by the bridge wardens, several years since, on the occasion of the building of new Rochester bridge, and who have presented the city with the site on which to erect the new quay, a vacant piece of ground between the railway bridge and the offices of the water-bailiff. The plans were approved, and the work will shortly be commenced. The cost will be from £1,000 to £1,500.

Malton.—Operations have lately been in progress for exhuming the contents of two ancient tumuli—one on the Howardian Hills in the North Riding, the other on the East Riding Wolds. The first tumulus opened was upon Amotherby Heights. After removing a portion of the mound and excavating below the reach of modern tillage, it was found the tumulus had been previously opened, and, but for the accidental discovery of a British urn, the work would have been abandoned. This urn was of the cinerary group, of baked clay, and ornamented by dots, as if made by the end of a stick when the clay was in its softest state. The discovery of this urn led to the inference that a double burial had taken place in the tumulus, as the centre (the usual place of sepulchral deposit) was not reached. It was, therefore, resolved to continue the explorations, and the searchers were rewarded by the discovery of another urn, also of slightly-baked clay, but profusely ornamented, and having four claws or feet. This was also a cinerary urn. The first-named urn has been added to Sir George Strickland's collection; but it is to be regretted that the second and most valuable was, while being dried before a fire, crushed to atoms. The two following days were devoted to the opening of a large tumulus on the wolds above Sir George Strickland's seat at Newton. This ancient burial-place was of considerable size. The men encountered quantities of flint, which, being removed, disclosed the fact that the cist, or pit, had fallen in (having been walled with unhewn flint stones), the removal of a portion showing the skeleton crushed to fragments. Portions of a Saxon urn were found near the head. No ornaments or weapons were found. In the neighborhood, during marling operations, portions of pottery have been discovered, which seem to indicate the high lands of the wolds to have been under Anglo-Saxon occupation.

Liverpool and Birkenhead.—*Memorial to the late Prince Consort.*—At a meeting of the Liverpool Town Council, the special committee on the memorial to his late Royal Highness the Prince Consort stated that, after having considered the letter of the Lord Mayor of London, they were of opinion that it was the unanimous feeling of the inhabitants of the town that all funds raised in the borough for the above object should be expended in a local memorial to the late Prince. They recommended that an equestrian statue of the late Prince Consort be placed in the area on the east side of St. George's Hall, and that a sum not exceeding £5,000 be appropriated for this purpose out of the borough fund. Mr. Still objected to the statue, and believed that the £5,000 would have been better devoted to a suitable building in which to enshrine art treasures. The Council, however, almost unanimously agreed to the recommendation of the committee. Mr. Jackson, M.P., has offered to erect a statue in the Birkenhead Park at his own expense.

Brighton.—*Drainage.*—The Town Council of Brighton have held a special meeting upon the question which has been forced upon their attention—the complete drainage of the town. The special business of the meeting was to receive a report from the Town Surveyor (Mr. P. C. Lockwood), submitting for approval a drainage scheme, involving an outlay of £75,000. The Surveyor's plan is to drain into the sea by means of a central sewage pipe 30 inches in diameter and 1,000 feet in length, beyond the margin of the sea, the south end of this pipe to be 18 feet below the mean level of the sea. In the Surveyor's opinion this mode of draining the town will not be attended with any unpleasant results; it will neither affect the bathing nor the purity of the air, upon which the prosperity of Brighton so much depends. It was resolved that this report be approved and referred to the Works Committee, for them to consider the proper steps to be taken for proceeding with the works with as little delay as possible, and for raising money to defray the expenses.

Edinburgh.—*The Late Catastrophe.*—Two reports, by professional men, on the fall of the tenement in the High-street, on the 24th of November last, are in the hands of the authorities. One of these is the joint report of Messrs. Leslie and Stevenson, civil engineers, to whom the matter was remitted by the Procurator-Fiscal two days after the fall of the building. It is understood that these gentlemen attribute the catastrophe to the subsidence and ultimately sudden fall of the wall running from east to west which existed in the centre of the building, and that such fall was occasioned by the wall having been on the lower floors pierced by successive alterations for the "improvement" of the property till it became quite incapable of sustaining its own weight, independently of that of the upper floors, the joists or beams of which ran into and rested upon it. The other report is by Mr. J. D. Peddie, architect, made subsequent to, and with knowledge of, Messrs. Stevenson and Leslie's report. It is understood that Mr. Peddie substantially concurs in those gentlemen's views of the causes of the catastrophe, though he attributes more weight to certain specified alterations of the central wall than they do. We believe that Mr. Peddie also expresses much

regret that examination of the building had not been made immediately on symptoms appearing of the subsidence of the wall; and also that the examinations on the Saturday previous to the catastrophe on Sunday morning, which were only partial, had not been more searching and complete.

Leighton Buzzard.—New Corn-exchange.—A number of men have been set to work to take down the old premises, which for many years was known as the George Inn, to make way for the contemplated new Corn Exchange. We hear it is intended to have the building proceeded with as quickly as possible, so that it may be expected to be erected in a few months, and opened for general business during the coming summer.

Chichester.—The Ruins of the Cathedral Tower.—A sale by auction has been held in the Cathedral yard of the greater portion of the stone which belonged to the older structure. All the moulded stone has been carefully preserved, either to be worked into the new structure, or to serve as models for its restoration; the stones which have been considered useful for the rebuilding have also been retained. A considerable quantity has, however, been declared useless for the purpose; it is this which has been disposed of. The total sum realised was £235 odd, the price being rather above the price of bricks at the same measurement.

Twerton.—New Bridge over the Avon.—A new bridge has lately been built at Twerton, across the river Avon, for Messrs. Carr and Co., clothiers. The bridge is built on the principle of the Bowstring Girder Bridge. It is 116 feet in length between the abutments. It is simple in detail, and there is no tie-beam or tie-rod required to keep it from expanding, the floor forming the tie or string of the bow. It is composed principally of wood, and is said to have been built by two carpenters and a smith (not including the smith's work) in less than twelve days of nine hours each. It took three days to get it across the river, but much time was wasted from the want of proper materials. The weight of the bridge is about 4½ tons; it is called the "Aerial Bridge."

Leeds.—The success which followed the experiment of erecting ten model cottages at Beeston Hill has induced the gentlemen who initiated that project to propose to build eight other dwelling-houses at Burley-lawn, upon the same improved principles, and at such a moderate cost as to place them within the reach of the limited means of working men. The foundation-stone of the second set of cottages has just been laid. The site on which they are to be erected is on a spot of ground forming a portion of the Burley-lawn estate, just beyond the Viaduct. Each house, upon the ground floor, will possess a parlor 15 feet 8 inches by 12 feet; a living-room, or kitchen, rather larger, and beneath these cellars, pantry, coal-place, &c. They will have separate front and back gardens; and on the second floor of the house there will be three bed-rooms, the two end houses having each also a couple of attics in addition. This accommodation is a slight improvement upon the houses at Beeston, and the expense will be proportionately increased. The six smaller houses will cost about £160 each, and the end houses from £180 to £190.

Hull.—A home for the laboring poor is now being erected in this town, at the junction of Midland-street and St. Luke's-street, by the Society for Improving the Condition of the Laboring Classes. The accommodation provided is for thirty-two families, each having a long room, scullery, and one, two, and three bed-rooms, according to the number of children. The cost is £3,435, exclusive of land. Mr. H. M. Eyton is the architect, and Messrs. Simpson and Malone are the builders.

Bideford-bridge.—On Wednesday se'night a joint meeting of the Bridge Trustees and Town Council was held, to consider the subject of widening the bridge. It was resolved to send Mr. Page his plans, together with his reports, that gentleman having intimated that he had no doubt he could modify and improve them so as not to exceed the original sum named for widening the bridge—viz., £3,500.

IMPROVEMENTS IN BUILDING, &c.

WINDOW-SASH FASTENER AND DRAUGHT EXCLUDER.—Dated July 6, 1861.—J. E. Reid, Fleming-road, Newington.

This consists of a hollow bar of brass or other metal fixed horizontally on (and the entire width of) the upper side of the meeting rails of sashes to ordinary windows, immediately over the cavity formed by the junction of the inner and outer sash. It is fixed by means of a continuous hinge partly let into the wood of the inner sash rail, and being in shape half round, or semicircular in section, it forms, when closed, a bridge over the before-mentioned cavity, its opposite edge falling into a small groove cut in the outer sash, thereby effectually excluding all draught. The ordinary catch of the present sash-fastener is not required, in lieu of which the hollow bar is made solid in the centre or point opposite the bolt, and a quadrant shaped slot is cut in a transverse, and also in a horizontal direction, to allow of the free traverse of the spindle of the bolt.

MACHINERY FOR CUTTING, SHAPING, AND DRESSING STONE, &c.—Dated June 28, 1861.—J. W. Graham.

The stone is placed upon a bed or table to which a reciprocating sliding motion is imparted. Above this table a beam extends from end to end of the machine, upon which an adjustable framing is supported, carrying an arrangement of bevil gearing in connexion with toothed wheels, which are attached by cranks to a tool box containing the chisel or chisels, and at the required angle for cutting; and the upper portion of this tool box is furnished with a weight by which the chisel is caused to cut or chip the stone. When motion is imparted to the gearing, the cranks will cause the chisel in the tool box to make a succession of strokes upon the stone, which, by the effects of the weight or hammer, will cause the stone to be cut or chipped to any form or size, which together with the depth of the cut may be regulated or controlled by the attendant. In order that the edge of the chisel may not become unequally worn, it is turned half round at each stroke by a crank or other means, so that each side is presented alternately to the stone.

INDURATION AND PRESERVATION OF STONE AND OTHER ANALOGOUS SUBSTANCES OR MATERIALS, AND THE PRODUCTION OF ARTIFICIAL STONE.—Dated July 9, 1861.—F. S. Baril.

This consists in using solutions of the alkaline silicates combined with the aluminate of potash or other suitable re-agent in such proportions as to allow sufficient time to elapse for manipulating the said solution, and thus enabling it, when applied to the surface of the stone or otherwise, to enter into and effectually penetrate the same. The solutions in combination with powdered pumice stone or other like material are also used for producing artificial stone for attrition, building, &c.

MIXTURE FOR EXTINGUISHING FIRE; APPLICABLE ALSO FOR PREPARING OR SATURATING VARIOUS KINDS OF MATERIALS AND FABRICS, FOR THE PURPOSE OF RENDERING THE SAME NON-INFLAMMABLE.—Dated July 5, 1861.—G. Williams.

The patentee claims combining into a mixture water, soda of commerce, alum of commerce, roach alum (or mineral salt), common salt, borax, oil of vitriol, and chloride of zinc, and the use and application of the said mixture for extinguishing fire and rendering materials and fabrics unflammable.

DRAWING BOARDS.—Dated July 19th, 1861.—E. A. Penley.

Here the object is to strain sheets of paper upon drawing boards without the necessity of using glue or other cement. The inventor proposes running an acute angular channel around the back of the board a short distance from the edge over which the edge of the paper is to be brought; wooden flaps are hinged on to the back of the board, and are provided with angular strips of wood to fit the channels. These hinged flaps are pressed down upon the edges of the paper which are turned over from the front, and the entire sheet becomes tightly strained without the use of paste, glue, or cement.

SEWER AND SINK TRAP.—Dated July 5th, 1861.—B. Fowler, Junr.

This invention consists of a square or other suitably shaped box, formed of iron, clay, or other suitable material, having the sides thereof flanging outwards from the bottom upwards, and having on the upper edge a ledge surrounded with a lip, upon three sides of which the lid rests when closed. The back ledge is formed a little lower than the front and side ones, and the back of the sides of the box is hollowed out to receive the lugs on the under side of the lid, by which it is jointed to the sides of the box by a horizontal transverse pin or pins. The bottom of the box is formed with an oblong hollow truncated pyramid, which rises some distance inside of the box, and is open at the top. The grated cover or lid is cast with an oblong box in the centre, which, being open on the under side, surrounds the top of the truncated pyramid escape port when closed, but is not in contact therewith, the inverted box being sufficiently large to allow the water to pass up into the inverted box on the under side of the lid, and escape through the opening on the top of the truncated pyramid into the sewer, the sediment remaining in the bottom of the box, from which it can be readily removed.

PRESERVING AND INDURATING TIMBER, AND FOR RENDERING THE SAME NON-INFLAMMABLE.—Dated July 15th, 1861.—T. Cobley.

By this invention a strong solution of potash, baryta, lime, strontia, or any of their salts, or of the salts of any metallic or other base capable of forming an insoluble compound with hydro-fluo silicic acid, is forced into the timber, or other vegetable matter to be acted upon by hydraulic or other means, and this process is repeated until the material is sufficiently charged or impregnated with the solution to enable it to withstand the influence of flame. After the impregnation has been thoroughly effected with any of the solutions, hydro-fluo silicic acid is forced into the wood by analogous means, with a view to render the solutions insoluble.

FIREPROOF CONSTRUCTION.—Dated 22nd July, 1861.—W. Hood, Reading.

For the purposes of this invention hollow iron beams or girders are constructed in such manner that they may be rendered suitable for conveying water into and distributing it in the buildings where such beams or girders are used. Girders so constructed and employed will also, by reason of their having water supplied to them, be prevented getting red-hot in case of fire, which would render them weak, and unequal to resist the weights thereon. The hollow beams or girders are made of iron and suitable angle iron, as common heretofore, and they are also closed at their ends or other parts, as well as at their sides, and are suitably formed to admit of their being connected to supply pipes leading to water mains or other sources of supply; they are also made with suitable perforations for distributing the water supplied to them into the rooms or parts of buildings where such beams or girders are situated, by which means such beams or girders will not only be the means of conveying water to extinguish a fire in the locality where they are situated, but will, at the same time, be prevented from becoming highly heated by reason of the passage of water through them, and will thus be caused to retain the requisite strength for upholding the weights thereon.

TENDERS.

DWELLING HOUSES, BROMPTON.

For erecting 6 seven-roomed houses, Old Brompton. Mr. F. Kersey, architect.
 Patrick and Son..... £3,700 Bass £3,200
 Jackson 3,575 Freeman (accepted)..... 2,300
 Pearson..... 3,499

PAVING, LONDON.

For repaving the portion of Chancery-lane, within the Holborn district. Lewis H. Isaacs, C.E., surveyor.
 Aspinall £1,298 0 0 Mowlem and Co £1,265 0 0
 Stiles..... 1,287 0 0 Sewell (accepted)..... 1,207 10 0

SEWER WORK, HOLBORN DISTRICT.

For the supply of materials, and the execution of jobbing and measured works, required for the sewers and drains within the Holborn district for one year.
 Abbot and Hopwood..... 10 per cent. under schedule prices.
 James Heyard 18½ " "
 John Phillips (accepted)..... 21 " "

CEMETERY, WHITBY.

For the chapels, superintendent's house, and iron railing and gates, for Whitby Cemetery. Messrs. Pritchett and Son, architects.

Masonry.—Wood and Sons..... £1,140 0 0
 Slating.—Oberend 79 6 8
 Plastering.—Braithwaite 40 15 0
 Joiners' Work.—Readman 233 8 0
 Plumbing.—Brown and Son 65 12 0
 Painting.—Readman 18 10 0
 Ironwork.—Hutton 80 0 0

£1,637 11 8

Architect's estimate..... £1,680

CHAPEL AND SCHOOL, RYDE.

For erecting a Baptist chapel and school, at Ryde. Quantities supplied. Francis Newman, architect, Ryde.

Kemp £2,700 Jolliffe £2,300
 Sibley 2,574 Denham 2,200
 Smith 2,396 Meader 2,140
 Langden James and John 2,310

ALTERATIONS, LONDON.

For alterations at 1, Greek-street, Soho, for the House of Charity. Mr. Joseph Clarke, architect.

The chapel and extension not included.
 Houghton £2,069 T'Anson £1,869
 Brown and Robinson 1,977 Lawrence and Son 1,888
 Trollope and Son 1,940 Foster 1,815
 Piper and Wheeler 1,897 Ashby 1,562
 Warrin and Son 1,893 Conder (accepted) 1,493

COTTAGE, LEICESTERSHIRE.

For a woodman's cottage, North Kilworth, Leicestershire. Mr. Joseph Clarke, architect.

Bromwich £245 0 Law (accepted)..... £221 18
 Wells 225 0

HOUSE AND SHOP, HERNE BAY.

For building a house and shop, at Herne Bay. Mr. Benjamin Adkins, architect, Faversham.

G. Creed £747 0 C. Welby £390 0
 J. Kelson 693 12 E. J. Jell (accepted)..... 584 10

HOUSES, &c., SOUTHAMPTON.

For erecting houses, &c., at Southampton, for Mr. John Smith.			William Hives, architect, 23, Portland-street, Southampton.		
Hillier	£1,372	0	Philips	£1,132	0
Scott	1,264	0	Newton	1,121	13 5
Samuels	1,248	0	Ball	1,083	0
Gaulding	1,240	0	Rogers	1,072	0
Lewis	1,222	10	Jessop	1,070	0
Bailey	1,198	0	Martin	975	0

COTTAGES, ELTHAM.

For the erection of a pair of semi-detached cottages, at Eltham, for Mr. Charles Wilson.					
Mr. Thomas Chester Haworth, surveyor, Eltham.					
Blackhall and Gorrur	£726	J. and C. W. Todd	£319		
Elliott	615	J. Wass (accepted)	480		
Thomas O. Todd	540				

COMPETITIONS AWARDED.

WETTERBY WORKHOUSE.

We understand that nine designs were sent, in reply to the advertisement for this work, and that the one by Messrs. Pritchett and Son, of York and Darlington, has been selected, and is to be carried out by them on the usual terms.

COMPETITIONS OPEN.

BRIDGE.

BRISBANE RIVER.—The Municipality of Brisbane are prepared to receive designs and tenders for the construction of a bridge over the Brisbane river, at Brisbane, the capital of Queensland. The author of the best design, at the lowest cost, will receive a reward of £150, or be employed to carry the work out, providing he furnishes sufficient proof of his competency and experience in similar undertakings. A premium of £80 will be awarded to the next best design, and £40 for the next best. The plans, specifications, and estimates of the first and second designs will be retained by the Corporation as their property. The remainder will be returned to the competitors; but the corporation will incur no responsibility as to their safe delivery. Each set of drawings, and the documents accompanying them, are to be distinguished by a motto only, and accompanied by a letter in a sealed envelope, marked with the same motto, and containing the author's name and address, and such testimonials as he may think proper to furnish. Professional judges, being non-competitors, will be appointed by the Corporation to determine the merits of the respective designs. Eligible tenders for the work, accompanying the design, will be entertained. All drawings and tenders to be delivered at Gresham House, on or before the 15th of March next. Copies of the instructions to competitors, and the plan of the city, can be obtained of F. Mangels and Co., the Colonial agents, and agents to the Municipality of Queensland, 86 to 88, Gresham House, Old Broad-street, London, E.C.

HARBOR WORKS.

LYME REGIS.—The Borough Council require a plan, specification, and estimate for carrying out certain works at the Cobb or harbor there; to be sent in to G. Hingerton, town clerk, by March 1st, when the successful competitor will receive 15 guineas. Full particulars can be had at the offices of the Cobb clerk or town clerk, Lyme Regis.

CONTRACTS OPEN.

HOSPITAL.

DEVONPORT.—For the erection of the Devonport Stonehouse, and Cornwall Hospital, at Devonport. Drawings, &c., with Alfred Norman, architect, Ker-street, Devonport, until the 22nd February, where tenders, sealed, and endorsed "Tender for Hospital at Devonport," must be delivered not later than eleven a.m., on the 24th February.

CATTLE MARKET.

COLCHESTER.—For the formation of the New Cattle Market, in Colchester. Plans, &c., at the office of James Cooke, Esq., C.E., Colchester. Tenders, under cover, addressed to S. Turner, town clerk, Colchester, on or before the 17th Feb.

WAREHOUSES.

LEEDS.—For the erection of three first-class woollen warehouses, in King-street, Leeds. Plans, &c., at the office of Mr. Cuthbert Brodick, architect, 2, Park-place, Leeds, to the 10th February. Bills of quantities will be provided for parties requiring them. Sealed tenders, addressed to "The Directors of the Leeds King-street Warehouse Company, Limited," to be delivered at the Company's office, 1, Bond-place, Leeds, not later than February 19.

CHURCHES.

IRELAND.—For works to be executed at the churches of Island Magee (Kildollagh), and Ramoon, co. Antrim, Kildart, co. Armagh, Down (cathedral), co. Down, Kilsaran (Castibellingham), and Mansfieldstown, co. Louth. Plans, &c., with the resident ministers of the parishes. Tenders to be forwarded, sealed, prepaid, and addressed thus—"Proposals for the church of ———, the Ecclesiastical Commissioners for Ireland, Dublin," by February 22nd.

CHAPELS.

BRISTOL.—For the erection of the Clifton Wesleyan chapel. Drawings, &c., with Fosters and Wood, architects, 6, Park-street, Bristol, till the 28th inst., on or before which the tenders are to be sent to the architects, sealed and endorsed "Tenders for Clifton Wesleyan Chapel."

CEMETERY WORKS.

UTTOXETER.—For works to be done at the new cemetery, Uttoxeter. Particulars on applying to Benjamin Wilson, architect, No. 12, Corn-market, Derby. Tenders, endorsed "Tender for Work at Cemetery, Uttoxeter," to be delivered to A. A. Flint, Esq., Uttoxeter, on or before the 19th February.

PARSONAGES, &c.

YORKSHIRE.—For building a small parsonage house and offices, at Garnton, twelve miles from Hull. Tenders, to be prepaid, on or before the 20th February, addressed to the architect, Mr. R. J. Withers, 51, Doughty-street, London, W.C.

PERTH (N.B.).—For the erection of a new manse and office, at Dunning, Perth, N.B. Drawings, &c., with the architects, William G. Habersham and Pitt, 38, Bloomsbury-square, London; and on application to the clerk of works (Mr. Jones), at Duncrub-park, Dunning.

PRISONS.

KENT.—For certain works to be done at the county prisons, Maidstone, to form store-rooms, &c. Plans, &c., with Martin Bulmer, county surveyor, Maidstone. Sealed tenders, endorsed "Tender for Works at the County Prisons, Maidstone," are to be delivered to Mr. Bulmer, by four p.m., on the 27th inst., and persons tendering are to be in attendance at the Courts of Justice, Maidstone, at half-past twelve on the 28th February.

DWELLING HOUSES, &c.

LANCASHIRE.—For the erection of a dwelling-house, together with spacious business premises, proposed to be built in Lytham, Lancashire. Plans, &c., with Mr. S. Wartenberg, the Bazaar, Lytham. Tenders not later than 26th February.

WATERWORKS.

WELCHPOOL.—For laying and jointing about 6,500 yards of cast-iron pipes, and for providing and fixing sluice cocks, hydrants, and other works, for the Welchpool Waterworks. Specifications, &c., may be obtained of Messrs. Robert Dymond and Sons, surveyors, Exeter, at 10s. 6d. each. Tenders by March 10.

RAILWAY WORKS.

IRELAND.—For the execution of the work of the Letterkenny Railway (15 miles 5 furlongs). The line is set out and lockspitted, and the contract, drawings, and specification, may be seen on application to John Bower, Esq., the Company's engineer, 28, South Frederick-

street, Dublin. Tenders received until the 20th of February next, addressed to Alexander John Robert Stewart, Esq. (the Chairman of the Company), at the Office of John Storey, secretary, Letterkenny, County Donegal.

IRELAND.—For the construction of the works upon the Midland Counties and Shannon Junction Railway, between Clara and Banagher, and commencing at a point a mile and a half from the Junction of the Midland Great Western and Great Southern and Western Railway Companies, on to Banagher, a distance of about 17½ miles. Plans, specifications, quantities, &c., are to be seen with the engineers of the Company, John Hill, Esq., Tullamore, and Henry Brett, Esq., 8 Harrington-street, Dublin. Tenders to be sent in not later than the 8th March, at 12 o'clock noon, endorsed "Tender for Works," and addressed to J. Fowler Nicoll, secretary, offices of the Company, 53, Lower Dominick-street, Dublin.

COLENE VALLEY AND HALSTEAD RAILWAY.—For the erection of a booking-office, waiting-rooms, dwelling for station master, and offices in connexion therewith, at Halstead Station. Drawings, &c., at the offices of Mr. Watt, at the Railway Station, Halstead. Tenders before 12 noon, on the 24th inst., addressed to the Directors, at Halstead Station.

MILITARY WORKS.

LONDON DISTRICT.—For works and repairs at the undermentioned stations, separately or otherwise, from the 1st of April, 1862, to 31st March, 1863, inclusive, viz.—London, comprehending the Tower of London, all the barracks and other buildings within five miles of that place, and Turnham-green Militia Barracks; Croydon and Carshalton Barracks; Hounslow, Hampton Court, and Kneller Hall Barracks; and Richmond Militia Barracks; Windsor Cavalry and Infantry Barracks, and Belvedere Fort; Militia Barracks, Barnet; Militia Barracks, Hatfield; Militia Barracks, Uxbridge. Schedules and printed forms of tender, price 7s. 6d. each, and all necessary information, on application at the Royal Engineer Office, 11, James-street, Buckingham-gate, London, S.W. Sealed tenders will be received at the War Office, Pall Mall, London, S.W., addressed to the Director-General of Contracts, on or before the 21st of February, 1862.

WELL-SINKING.

DONCASTER.—For boring, to ascertain if water can be had by means of an artesian well, in the Borough of Doncaster. Tenders to state the cost per yard for the boring; the contractor to find all implements and plant. Mr. John Butterfield, No. 25, Horse-fair, Doncaster, will afford every information, and point out the site or sites of the intended work. Sealed tenders, with references, to the Mayor, Mansion House, Doncaster, on or before the 24th February.

HULL.—For the sinking a shaft and making a bore-hole at the Derringham Springs, and other works connected therewith. Plan, &c., with Thomas Dale, resident engineer, Engineer's Office, Stoneferry, Hull. Sealed tenders, addressed to the Chairman of the Water Committee, must be sent in to Robert Wells, Esq., the town clerk, not later than the 25th inst.

ROADMAKING, &c.

LIVERPOOL.—For executing the various works required in laying out and forming the Liverpool Cemetery, at Anfield Park, Walton, including the making of roads and walks, the levelling, shaping, trenching, and digging of the ground, the formation of drains, and other similar operations. Plans, &c., at the offices of the Board, No. 12, Clayton-square, Liverpool. Sealed tenders, addressed to the chairman of the Board, marked "Tender for Ground-work," must be delivered at the offices of the Board on or before the 19th inst.

IRELAND.—For the following works, in the barony of Goresy, in the county of Wexford:—1.—For making a new line of road from the corner of the Post-office in Goresy, to Edward Foley's cottage in Ballyraheen, containing about 415 perches; not to exceed £500. 2.—For making a new line of road from Goresy to Tinnahilly, containing about 300 perches, in the townland of Ballygarry. Plans, forms of tender, &c., obtained at the office of Henry E. Wynne, secretary to the Grand Jury, County Court House, Wexford.

SEWERAGE.

OXFORD.—For constructing an open sewer along a portion of the Trill Mill Stream in the city of Oxford. The drawings, &c., at the Commissioners' office, Town Hall, Oxford; or particulars obtained from Mr. John Galpin, surveyor. Tenders, on printed forms, which may be obtained either of the clerk or the surveyor to the Commissioners, must be delivered, sealed, to Frederick J. Morrell, clerk to the Commissioners, No. 4, St. Giles's-street, Oxford, on or before twelve noon, on 10th March, endorsed "Tender for Open Sewer."

SUPPLY, &c.

SWANSEA.—For the following contracts for the Swansea Local Board of Health. Contract No. 2.—For supplying cast-iron water-pipes, and other castings. Contract No. 3.—For supplying sluice valves, hydrants, and other steel fittings. Contract No. 4.—For laying and jointing cast-iron water-pipes, fixing sluice valves and hydrants, and for other works. Duplicate specifications, &c., on payment of £1 for each contract, on application at the office of the town-clerk, Guildhall, Swansea; or at the office of Robert Rawlinson, Esq., Civil Engineer, 34, Parliament-street, Westminster. Sealed tenders, endorsed, "Tender for Contract No. 2, 3, or 4," must be forwarded to the office of C. B. Mansfield, town clerk, Guildhall, Swansea, on or before the 25th Feb.

CLOCK TOWER.

WARRINGTON.—For the erection of a public clock tower on Trinity Church, Sankey-street, in the borough of Warrington. Drawings, &c., at the office of W. P. Coxen, C.E., Market-street, Warrington, to the 22nd inst., and tenders for the work must be left at the Town-hall, on the last-mentioned day, endorsed "Tender for Clock Tower," addressed under cover, to the Chairman of the General Purposes Committee.

BRIDGE.

BOLTON.—For the erection of a timber bridge across the river Irwell, at Agecroft-bridge. Plans and particulars at Mr. A. Pilling's, Contractor's office, Davenport-street, Bolton.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favor us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

H. J. JEN.—We give those subjects which we may deem suitable, and in such order as may seem to us desirable. Many other matters claim our attention.

R. Y.—So much depends on the nature of the work arranged for, that it would be impossible to give a fair decision without knowing more of the matter.

J. C. Y. (Leicester).—As soon as possible, the delay is not with us.

R. J. R.—Certainly not.

B. A.—Next week.

E. C. (Clapton).—Yes, both may be had of our publisher.

J. B. (Ipswich).—We have no time to teach engraving.

F. W.—Not suitable.

K.—v.—In type.

Mr. M.—Thanks; view shall be engraved.

Z. Z.—Shall appear when we receive name and address; it is our rule.

O. U. O.—A view is being drawn.

Messrs. A. and H.—Statement contains nothing new.

BART. MUS.—Too late.

A. T. B. A.—J. P. C.—Thanks.

A DIRECTOR.—We cannot assist.

M.—Shall hear from us.

St. PANCAS.—Below our mark.

A SUBSCRIBER FROM NO. 1.—Send sketch.

ADVERTISER.—Yes, if noteworthy.

NOTICE.

The Seventh Volume of the BUILDING NEWS is now ready, bound in cloth, price 21s.

Subscribers can have their copies bound, either with or without the advertisement pages, for 4s. 6d., on sending them to the office. Cases ready for binding the volume may be had price 2s. each.

* All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old Bow-street, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 78 to 21, Old Bow-street. Advertisements are received up to six o'clock on Thursdays.

RECENT ACCIDENTS.



HAT with the fatal calamity at the Hartley Collieries, and the more recent accidents in the Waterloo-road and in the Amherst-road, Hackney, the public will have supped full of horrors. We have had hardly time to recover from one deplorable mishap before, in rapid succession, the sickening details of others meet our eyes in every newspaper. Life is crushed violently from the bodies of fellow-creatures, limbs are broken, human flesh frightfully lacerated, and, above all, looms the melancholy spectacle of homes broken up and made desolate by the loss of those props which heretofore sustained them. The most painful reflection which these sad catastrophes suggest is that they might, perhaps, all, with proper precautions, have been prevented. It can scarcely have escaped notice that they are all referable to one and the same cause—to a desire to work property cheaply—and that thoughtlessly, we honestly believe, men's lives have been risked, and, as it turns out, sacrificed, to insure large returns. An extra shaft to the collieries would have insured a safe retreat to the

entombed miners; good bricks and mortar, less haste, and more efficient supervision, would have made sound buildings instead of a ruinous heap in the Amherst-road; a compliance with the notice of Mr. North, the Lambeth Surveyor, would have made the grating in the Waterloo-road safer now than it has been for years past; and yet we cannot justly lay the deaths at the doors of the respective employers, for we should remember that they are but types of their several classes. The Hartley mine was not a solitary instance of work done with a single shaft. North, south, east and west of the metropolis buildings have been run up as quickly and as *economically* as those at Hackney. Wherever tenements are let and sublet there is always an evasion, as far as possible, of a landlord's duties. Further, this method of business is but another phase of the tradesmen's fraud which adulterates every morsel of our food, dilutes our drinks, falsifies our fabrics, shortens the length, and diminishes the number of twists in our "warranted" cotton. It is part and parcel of the great lie which encases our social life. By the aid of unlimited "competition" we have created the Frankenstein, and the monster's cold touch is ever startling us. He smirks and smiles behind every counter, he tints our elaborate and deceptive perspective views, he guesses at estimates, and wheedles committees. He copies pictures, buys them knowing them to be spurious, and then, with becoming gravity, dilates upon their genuine character. The employers of the unfortunate victims must, we believe, with natural retributive justice, suffer considerable pecuniary loss, to say nothing of other grief. He who is without sin of the same character may cast another stone at them. We would rather stretch out our hand in the hope of catching hold of some remedy for the evils of which they are the victims, and which have not yet put forth all their upas-leaves.

We may dismiss the colliery accident. It was of such magnitude as to insure Parliamentary provision against its recurrence.

The Waterloo-road calamity suggests one or two striking points for observation. It is admitted that the paving-stone and the iron railing were private property, and, consequently, that they were beyond the control of the vestry. The circumstance of their fall shows clearly their dilapidated and badly constructed state. The stone with a flaw in it was 5 feet 4 inches wide, and it had no supporting brick arch. It was simply let in to the wall of the house, and rested on the other side upon the pavement wall. The cause of the accident is apparent to every man of common sense, and the jury was not drawn off on a false scent by the insinuation that the broker's violence in breaking open a door dislocated the landing. Mr. North, the surveyor of Lambeth, appears, from his evidence, to have brought the dilapidated state of these gratings before the General Purposes Board between two and three years ago, and he believed notice was served on the landlord's agent to repair the landings by putting brick arches under them. Subsequently to that time he "called Mr. Legge's (the landlord's agent) attention to the matter," but still *nothing was done*. The landlord had, meanwhile, sublet the premises, and, we are informed by Mr. Jeffs, the sub-tenant, said nothing of this notice to repair. He, like other "business men," made the best bargain he could, and was not bound to proclaim the defects of the property. Now, in common fairness, we ask, do not such proceedings take place daily? Does not even law—we talk not of morality—side with the lessor, and proclaim that the lessee should

use his eyes when taking possession of property? Do not let us be too hard upon the revealed evader of moral obligation, when we should but acknowledge his shrewdness if no investigation had been needed into the whole of the circumstances attending it.

It appears to us that the real flaw which caused the accident is a little removed from the scene of it. In the first place, surveyors can only act when their "attention has been called" to a dangerous structure. They, who from practice are most likely to see defects and dangers, must wait until less expert men discover and complain of them. They may know of unsafe spots, but they must know them officially before they can report upon them; and this brings us to the second noteworthy fact, that a complaint of the state of this identical landing was received, and that a notice was served for its repairs, but, strangely, no one seems to have had authority to compel the defect to be made good. For two years and a half people have walked over this condemned landing, its state has been known, and yet neglect has been allowed to culminate in disaster. Surely a little extra power might wisely be conceded to the surveyors. We can, in future, dispense with their waiting to have their attention directed to dangers, and we might advantageously allow them to enforce compliance with their notices. Failing such compliance, they should have power to get the necessary work done and to recover the amount expended from the parties who disregard their notices. We believe that a simple enactment like this would do more to prevent future accidents of the kind than fifty expressions of opinion—unfortunately, too soon forgotten—by an inquest jury.

The accident which occurred at Hackney was, if we are to believe all the witnesses, something very mysterious. A portion of a range of "superior" houses, three stories high, and having shop fronts, which have been only just roofed in, and wherein the carpenters were laying the floors, suddenly fell, like a child's card-house, burying no less than twelve persons in the ruins. The foreman of the carpenters stated that there were bond-timbers of the usual size round the buildings of each house. The roof "was tied in a proper manner." He believed the mortar was "good." "The largest proportion of bricks used were 'stocky.'" Old bricks had been partially used, but they were sound. No story posts were put to the houses which fell. This witness attributed the accident to the frost having got into the work, and the mild weather coming suddenly afterwards had caused the wall to buckle out.

A plasterer, likewise in the employ of the builder, also bore testimony to the good quality of the mortar, and confirmed the statement of the carpenter as to the bricks. They were, "generally speaking, 'stocks,' but he *had* seen better." He likewise thought the frost "might" have something to do with the accident; and, also, that the trains passing along the line—fifty yards distant—"might" have something to do with it.

A third witness, also in the employ of the builder, attributed the accident to circumstances over which his master had no control. "The mortar was good, being formed of three parts sand to one of lime;" but added, as the sand had been lying there for a long time, no doubt other substances got mixed with it. A larger quantity of lime was mixed with it in consequence of the presence of this "foreign" material. The bricks were not of the best quality. As he agreed with the former witness that the bricks were inferior, we are at a loss to understand what he means by the *second-rate* being placed on the top of the walls. Does he wish to infer that the third and fourth rate ones were placed below, for no witness has hinted at the fact of first-rate bricks being used.

Henry Ketteridge, on the contrary, decidedly condemns the mortar; it "ought not to have been used in such buildings as these." Loam was mixed extensively with the sand. The bricks "*crumbled in his hand when he put them into his hod*." He gives us a clear insight into the nature of the work, when he tells us that the inferior mortar, made of the sweepings of old buildings, was used *at the back of the 4½-inch facings*. "The bad bricks were used for filling-in work." He further tells us that "the piers have been *cracked this last three weeks*." Another witness said, that "the bricks were of the worst description," and that "the mortar was of a very inferior sort."

Leaving the testimony of the workmen engaged, we come to that of the professional men.

Mr. Topham, civil engineer, decidedly condemned the materials; the mortar was "soft and loamy," part of the bricks "were very much over-buried." The "pier was not of sufficient strength." In his opinion "the accident was caused by the defective materials used in the buildings."

Mr. Tillitt, the surveyor, attributed the accident to the number of men on the work. His "practical experience" led him to believe that the bricks and mortar were of fair quality, and as a proof he brought forward the fact that the party-wall was still standing, but he admitted immediately afterwards that he had not much faith in his practical experience, for he did not think the wall sufficiently secure to go him-

self inside. Mortar made of the sweepings of the old houses is certainly a common article and frequently used, but we are certainly surprised to hear a surveyor of "large experience" approving of such work. Altogether, we think Mr. Tillitt might, advantageously for himself, have withheld his opinion on the matter. A gentleman who proclaims the security of a wall which he instinctively fears to approach, can scarcely be expected to have his "practical experience" of it valued.

The evidence of Mr. Ashpitel showed that the *outside* bricks and mortar were good. He believed the defective pier was the main cause of the accident, that the frost had contributed to it, and that the weight of men and materials was the moving cause.

Mr. Legge, the district surveyor, on the contrary, attributed the accident to the frost, the vibration, and the subsequent loading of the work whilst it was yet green.

There was a good deal of conflicting evidence brought forward, but the jury hit the truth in their finding. There can be no doubt that the materials were inferior, that there was inefficient supervision, and too much haste in the construction; but again we say buildings of this description are run up every day. Money is invested in them, and they are occupied.

Mr. Amos uttered the simple truth in saying that the materials were "suitable for buildings of the kind," by which he meant that they were such as were ordinarily used in buildings of that character—in buildings which have made the fortunes of the speculators who constructed them. It was a mere accident which caused these buildings to fall and others to stand, with their deceptive 4½-faced work successfully masking their rottenness. We are not inclined to be severe upon a man who, by a sudden lurch, has been thrown upon a rock, whilst others who have steered equally close rest at anchor uncensured. The blame is not with an individual, but with a system. Every outskirt of London is studded with buildings not only as bad but worse than these in the Amherst-road.

Again, if a speculating builder were to erect houses with materials of uniform good quality, he would get no advanced price in selling or letting them. If they *appear* good, it is sufficient for the discriminating public, who buys what is cheap to procure a large per centage on its investment. Even the mortgages, by Mr. Green's evidence, do not require specifications. All they require is, that the buildings be constructed according to the Act, and according to approved drawings, and that there is their money's worth on the ground. Mr. Legge, the district surveyor, even informed the jury that it was doubtful whether he had power under the Act to make any representation about the quality of the materials. The walls must be a certain thickness, but they may be built of place bricks or "sloughs," and "loamy mortar," without violating the Act, whilst a wall of the best possible materials would be condemned if it were found a trifle deficient in thickness. This is an anomaly which requires immediate rectification.

The only efficient provision which can be made against future accidents of this kind is to compel builders to submit a general specification, describing the quality of the materials, with the drawings, to the district surveyor, and to give him the same authority respecting it as he now possesses about the thickness of walls. This would insure good building to a sufficient extent, and in case of failure we should know upon whom the blame would rest. It would be in the end better for the speculating builder, because it would be a guarantee which he could produce to a future purchaser that the hidden portions of the building were what he represented them to be, and justify him in asking a proportionately larger sum for it. It would raise the reckless man to the more honourable level of the sturdy conscientious builder, and diminish considerably the risk—of necessity great—which all labouring men are exposed to.

THE BUILDERS' BALL.

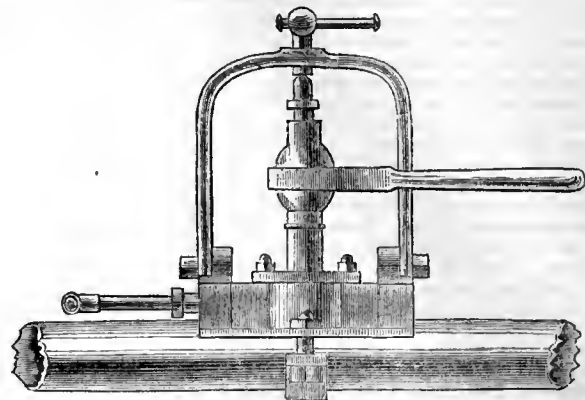
THE Annual Ball in aid of the funds of the Builders' Benevolent Institution took place last night, at Willis's Rooms, King-street. It was numerously attended, and the company broke up at a late, or, more correctly, early hour.

PORTUNNA, IRELAND.—A mansion is about to be built at Portunna, Ireland, for the Marquis of Clanricarde, from designs by Sir Thomas Deane and Son, architects. The style adopted is French Gothic. In the main buildings are comprehended on the ground floor an extensive suite of apartments, together with grand hall and staircase, spacious corridors, &c., and on the upper floor are various bed, dressing, and bath rooms, &c. The building will cost £15,000.

GAS.—London housekeepers, who are paying 6s. per 1,000 cubic feet of gas, will be glad to hear that the recently-invented "water-gas" is likely to take the place of coal-gas. According to the *American Gas-Light Journal*, this gas, seventy-three parts of which are derived from water and twenty-seven from oil, at nine cents per gallon, is in all respects better than coal-gas, besides the advantage of being very much cheaper.

SIMMONS' GAS AND WATER CONNECTOR.

AT a meeting of the Metropolitan Association of Medical Officers of Health, on Saturday, February 15th, Simmons' Gas and Water Connector was introduced by Dr. Aldis, of St. George, Hanover-square. A specimen of the machine (here illustrated) was upon the table, attached to a circular piece of wood,



to represent a gas or water main pipe, whereby the action of the machine was pointed out. It was said that the number of accidents which happen from the present system of connecting the service-pipe to gas mains render it highly necessary that some method should be adopted of carrying out the work without risk either to the men engaged in it or to the adjoining property. The Connector has been patented. It is simple and compact in construction, and so easily adjusted that the most unskilful workman may thereby connect a piece of pipe to a gas or water main, charged with any amount of pressure, without escape of gas or water. The machine is screwed to the main pipe, and the drilling of the required hole commenced when the opening has been made into the main; the drill is partly withdrawn from the stuffing-box. The handle on the left side is pushed in, closing by the valve attached thereto all communication between the interior of the main and the stuffing-box. The drill being then removed, the top is inserted, and the valve is opened, so as to allow of the hole in the main being tapped. The tap is then withdrawn in the same manner as the drill was previously, and the connecting piece of pipe being inserted, the machine is removed.

Dr. Aldis proceeded to explain the working of the machine, the necessity for its general adoption, and the benefits which would result therefrom, as follows:—Its use would avert the risk of human life, as he could fairly testify, having seen it in operation in Herscherry-road, Westminster. The most expert workman could not attach a service pipe to the main without the escape of from 35 to 40 cubic feet of gas according to the calculation of a gas engineer, but by the means of the invention before them the escape of gas during the operation alluded to is almost imperceptible. One workman had been knocked down seven times in attaching service pipes, from the pernicious effects of the same escape of gas on the present objectionable system. The small stuffing box receives all the gas that escapes from the main whilst the connection is made, so that no injury is experienced by the workman.

Mr. Simmons, of New Palace-yard, the inventor, who was in attendance, observed that Dr. Aldis had been kind enough to explain the general principles of the Connector, and it only remained for him to give the details of its working; he then explained the details of his machine.

The Chairman observed that he thought it was very effective for the object in view. Dr. Gibbon moved "That the thanks of the Association be given to Mr. Simmons for his invention, and to Dr. Aldis for introducing it to the meeting. He (Dr. Gibbon) thought that it would be especially beneficial in the case of subways for gas and water pipes, because the escape of 40 or 50 feet of gas under such circumstances would be highly dangerous.

Dr. Randle observed that the principal opponents to the application of new inventions were found amongst the workmen themselves, though they were in cases like the present most interested in the success of them. The motion of the Chairman having been carried unanimously, Mr. Simmons remarked that the Chartered Gas Company had approved of his invention.

SOCIETY OF ARTS.

AT the weekly meeting, held in the Society's Rooms, on Wednesday evening, THOMAS SOPWITH, Esq., F.R.S., in the chair, the paper read was "On the Relative Merits of the different Systems of Working Metallic Mines and Collieries," by Mr. H. C. SALMON, F.G.S., F.C.S. The author remarked that among the mineral resources of Great Britain coal and iron occupy by far the most important position, their value having been, in 1860, nearly seven and a half times as great as that of the produce of all the metallic minerals put together. The values were—coal, twenty millions; and pig-iron, twelve and a half millions; while all the other metallic minerals only yielded about four and a half millions sterling. In comparing the systems of working collieries with those employed in metallic mines, it should be borne in mind that coal was usually found in nearly horizontal beds, while the lodes of metallic minerals were generally nearly vertical, the position of the former being pretty easily ascertained, while the latter were most irregular, and often difficult to find. The mere discovery of metallic lodes became, therefore, a point of the greatest importance in this class of mining, and the value of the minerals, when found, was so great, that economy in the mere mechanical arrangements for bringing them to the surface was often a matter of secondary importance; while in coal mines the primary object was the economical and safe removal of the largest possible portion of the coal. The systems of driving and winding were never likely to be so perfect in metallic mines as in collieries, and in many of the former the workmen were still obliged to ascend and descend as much as 300 fathoms by ladders—a most exhausting addition to their day's labour. The ventilation of metallic mines was usually a matter of little difficulty, while in collieries it required the utmost skill, and, even with all the appliances of modern engineering, was often found difficult to carry out effectually. The author described the various plans usually employed for this purpose, and concluded by arguing that much consideration should be shown to the managers of mines, lest, as they were, with many difficulties.

BRITISH INSTITUTION.

SEVERAL of our contemporaries indulge annually in attacks on this Institution, because there are not more pictures by Royal Academicians exhibited on the walls, and attribute the fault to *diletante* management. The answer is a very simple one; it is against the rules of the Royal Academy that any of its members should exhibit in any other public building than its own; and the rest of the profession say that as the members of that body have a right to exhibit eight pictures every year at the Royal Academy, with the privilege of indicating by numbers chalked on the back the precedence they wish to be observed by the hanging committee, it is not just that artists enjoying advantages so exclusive should occupy the principal places in a gallery so small as that possessed by the British Institution. It is true that Royal Academicians and Associates occasionally exhibit, but it is by sufferance from the council in Trafalgar-square, and with respect to the merit of their recent contributions their absence need cause very little regret.

The present exhibition, although presenting a large mass of good painting, is not, upon the whole, perhaps, quite equal to its immediate predecessor. The collection of last year possessed several landscape and small subjects, painted and designed in a style which indicated an incipient feeling for a most pleasing branch of art now practised with success by the French painters,—we mean a mode of treating subjects of little importance in themselves with an elegance and refinement giving them a classical air, which rendered them very pleasing. Pictures in that style, we regret to find, have nearly disappeared on the present occasion; and another failure in the collection is the want of a real “sensation picture.” No. 1 in the catalogue generally indicates the committee’s opinion in this respect, and the object of their selection is always placed over the fireplace in the north room, and there consequently is now to be seen “The Jury,” by Mr. J. Morgan. The twelve heads are well painted, varied in character and expression, and very amusing withal; but we think the individuality of each is so strongly marked, that if the idea suggested be followed out, we should desire to know who they are, and then when we were told and found that they were studies from the artist’s friends, who never were assembled together for any particular occasion, we should then feel the true value of the picture as a permanent work of art. This was the fault in a less degree to be found in Webster’s Village Choir, but it is not a censure which can be cast upon Hogarth’s Group of Country Musicians, nor his Laughing Audience. In all his heads there was quite enough of the reality to satisfy the mind, and not so much individual peculiarity as to induce a wandering of the mind beyond the subject for a satisfactory resting-place. This picture, therefore, although possessing the merits we have stated, falls short when looked upon as the means of communication between the mind of the artist and that of the observer. It is, besides, when studied in a thoughtful manner—not looked at cursorily—only half a subject, because we are not shown what it is that occupies the attention of “The Jury,” and produces so great a variety of expression. This may be said to be the case with Hogarth’s Laughing Audience, but in that they are all decidedly laughing in various degrees, and from habit we can more easily fancy what they are doing on the stage than in a court of law.

Near to this picture, a little to the right, is, for homely feeling, the best picture in the exhibition, entitled “The Return of the Runaway.” The figure of the stalwart young sailor is admirably drawn; there is a nice bit of sentiment conveyed by the red stripe on his shirt sleeve, showing that although a runaway from his parents he has behaved well at sea and been promoted by his superiors. The astonishment of the mother, overpowering for the moment the instinctive sense that it must be her son, is admirably expressed. The little granddaughter is realising with wonder the actual individual of whose doings at sea she has heard so much, and the old father looks up from his newspaper with a vacancy of expression indicating that, possessed by the subject he has been reading, he has not yet had time to receive a new impression. The perspective of the furniture in this humble interior is excellent, and the tone is skilfully subdued so as not to attract the eye and attention from a quiet contemplation of the subject. The tone of colour has been objected to, but, if it be a fault, it is a fault on the right side, and it must be remembered that pictures painted in subdued and “broken tints” always look better out of exhibitions. We must not forget to state that Mr. J. Clark is the painter of this excellent picture.

Still continuing to the right, we come to a large picture by Mr. J. Gilbert, entitled “Cardinal Wolsey and the Duke of Buckingham,” which occupies the centre of the east wall, and which locality reminiscence connects in our mind as the *pons asinorum* of this gallery. We remember several unfortunate attempts at historical painting by Sir G. Hayter, which have hung here, and more recently the seriously pictorial mistake called “The Sacrifice,” by Sir Edwin Landseer—the sticklers for pictures by R.A.’s must have forgotten that—and now we have as great a failure from Shakespeare’s play of Henry VIII. by that most daring of *bravura* painters, Mr. J. Gilbert. We have frequently admired the dashing manner in which he represents a group of warriors, and his “Interior of Rembrandt’s Studio,” which hung on the opposite wall last year, was not very deeply studied though it was pleasing. The present picture, which has some merit in the disposal of Wolsey’s retinue, and in the successful although sketchy execution of some of the figures, may be praised in those respects; but when we come to the principal characters in the scene, the faces are almost hideous in drawing and painting.

Mr. Lance exhibits several clever fruit pieces, and among them is a frame containing two subjects, which he calls “Force and Finish,” each of them executed in the style implied by the title; and, as he seems to invite selection, we decide on preferring “Force,” if we are to understand

by “Finish” that a piece of matting deserves more consideration and labour at the hands of the painter than a bunch of grapes.

In “Effic,” by Mr. Le Jeune, we object to the prevalence of red, which is greatly increased by the green at the back of the chair, which is, besides, spotty in arrangement from the fault of not being repeated and distributed in the other parts of the picture. The face, in a reflected light, is, however, very nicely managed.

“The Counterfeit Coin,” by Mr. W. H. Knight, is a very perfect specimen of this class of painting. A little girl has, we suppose, received a piece of bad money from an old woman who keeps a stall, and returns with her father, demanding that it shall be exchanged for a “good one.” The principal figures act with great energy, the pretended astonishment of the old woman is well contrasted with the genuine and earnest manner of the little girl. The picture is excellently grouped, and is as well coloured.

The “Quiet Dell,” by Mr. Robert Collinson, is an example of how a close study from nature may, by the application of the legitimate rules of art, be rendered worthy of being accepted as a perfect picture. The “Quiet Dell” is really, as regards subject, nothing more than an imitation of a few groups of wild vegetation, with a little sky and less water, and which, besides being a perfect work of art, is, to those who can appreciate that distinction, as desirable a possession as any in the gallery. Although this is evidently a close study from an accidental arrangement of nature, it displays the advantages which may be conferred on such a subject by its being presented to the æsthetic mind of an accomplished painter, instead of falling into the hands of one whom it is the fashion to call a “conscientious and loving” adorer of the reality, who pretends to paint more than he can see, and spoils all he attempts to paint; who labours to depict all he knows to be there for the sake of truth, and perpetrates falsehood in persevering, and laborious and superfluous detail. In the little picture before us the principal masses of the composition are a group of dock leaves, a group of wild plants, of which we do not know the names, but differing in form and colour, and the third mass consists, in its leading points, of white flowers; these are brought as closely as possible in contrast with the darkest part of the picture, including a dark pool of water, which gives tone and accent to the general effect, while the other two masses are separated by portions of tangled grass and other weeds slightly indicated, contrasting with the decided forms of the leading features in the principal groups, while repose and relief are obtained by parts of the bank on which the vegetation grows being seen, and still more by the tranquil sky, which, serving as a background, and having some clouds indicated near the edge of the frame, repeats the idea of the more numerous forms below, thus bringing the two extremes—the sky and foreground—of the picture into unity. The general tone, as regards colour, is obtained by the rather delicate green of the dock leaves, slightly above nature. This is contrasted by the dark grey of the pool, and the masses of grass are relieved and heightened by the vivid red of some poppies. The keynote of the harmonious chord, therefore, is the positive red of the poppies, and its complementary tones will be found in the cool colour of the water and the yellow in the green of the general foliage. The red of the poppies being more prominent than any other tint, is more distinctly repeated and distributed by the red-flowered plants in the second group. The introduction of a wild duck in the gloom of the shade is judicious, as giving life and motion, but is still more valuable as a sentiment, suggesting, at the same time, the absolute quietude of so sequestered a spot. We have no wish to be over critical with so excellent a picture, but we noticed that the painting of two of the largest dock leaves in the foreground presented two dark spots of equal size and intensity, which, as the French critics say, “make holes,” and that the glazing of the small portion of the earth beneath them was too rich to be in harmony with the rest of the composition. These objections may, however, be easily removed by a little opaque colour being rubbed with the finger over one of the dark spots, and over part of the ground nearest to the principal leaves, and partly wiped off again, which will make this picture a desirable acquisition to any collection, notwithstanding the humble nature of its subject.

It is to be regretted that Mr. Lucas has not adopted a tone of colour more consistent with such a picture as that he exhibits under the title of “The Children of the Heath.” A subject so simple requires a more general and transparent mode of treatment than a solid, cool, and grave one, more suited to sculpture. We can at all times appreciate a conventional scale of colour, when it will enhance the sentiment of the scene, but one so æsthetic and below the reality, is certainly not in unity with two little girls gathering flowers on a heath. The younger girl is, however, very interesting in character, and is both largely drawn and painted, and was no doubt the inducement to paint the picture; but the other one, kneeling down and plucking the flowers, is extremely hard, poor and inartistic. “Shylock’s charge to Jessica,” by Mr. W. Holyoake, gained the prize, we believe, for painting at the Royal Academy. There is considerable talent displayed in it. The face of the Jew is earnest in its expression, but wants tone and breadth of character, and Jessica, whose dress is well but too prominently painted, is devoid of interest; the attitude and figure of Lancelot is, however, easy and well-drawn.

A scene from Bulwer’s Last Days of Pompeii, by Mr. J. Colby, deserves mention, for the consistent and classical style in which the figures are drawn, and the generally well-sustained character of the whole picture—reminding us of the school of David. He also deserves praise for undertaking a subject for which so little patronage is to be met with at the present day.

The landscapes are, as usual, rather numerous; those by Mr. Willi

Dawson and Lee Bridell, are very good. Mr. Lance retains his position as our first fruit and flower painter. Miss Stannard, we think, shows improvement this year; her compositions show that she can think for herself, and her works consequently display more originality than any others treating similar subjects. Mr. Horlor's calves are broadly painted, but suggest Sir E. Landseer more than we like, because where so much original talent exists, imitation of others painters is as unnecessary as it is injurious to the position of the artist. Taking the exhibition as a whole, if it does not manifest any advance in art, it at all events may be found to possess the ordinary degree of attraction.

ST. THOMAS'S HOSPITAL.

A MEMORIAL has been addressed by the Medical and Surgical Officers and Lecturers of St. Thomas's Hospital to the President, Treasurer, Grand Committee, and other Governors of the Institution.

The memorialists refer with pride to the history of the establishment which is to be displaced. "Not merely from three centuries ago, when King Edward VI. enriched it, but from more than six centuries, St. Thomas's Hospital, standing on its present site, has been a source of incalculable good to the suffering poor of the neighbourhood, of the metropolis, and of the nation. The vast direct services which it has rendered to the sick treated within its walls, are not the only benefits which it has conferred on mankind."

They cannot without deep concern be aware, "that the present time-honoured edifice is to be made way for other establishments; that a new St. Thomas's Hospital is to be raised in some yet undetermined place; that, where the new Hospital shall stand, and on what plan and scale it shall be constructed, are issues which the Governors now have open for decision."

It is felt that, in the impending change, there is a singular and splendid opportunity for increasing the usefulness of the Institution, that the Hospital may be made the very first hospital, and the school the very first school, in England. Knowing that, since the beginning of the present century, the income of the Hospital has (mainly through the falling in of leases) increased from about £12,000 to about £32,000 per annum; knowing that further increase at the same rate is still in constant progress, and that soon the annual income of the Hospital must be very largely in excess of the present scale of expenditure, the memorialists are glad to believe that, within reasonable limits, considerations of cost will not be an obstacle to the desired result.

On the other hand, the occasion has its dangers. The course which must now very speedily be decided upon, will be one from which there can be no return. If, unhappily, any considerable error were made in the placing or planning of the new Hospital, the consequences of that error would remain for many generations beyond remedy.

Especially the intentions of the founders and benefactors of the charity would be almost irreparably defeated, and the priceless public boon of a great school of medical and surgical science would at the same time be sacrificed, if the new Hospital were to be planted in any locality where physicians and surgeons of high metropolitan standing could not be expected to serve it with assiduous attention, or where masses of the labouring population would not have easy access to it for the relief of all their emergencies of sudden illness and injury.

It is also felt that it is of paramount importance that everything possible should be done to insure a free and full discussion of the important issues which will be raised. And it seems to the memorialists that this object cannot be attained unless the several issues are made public for some reasonable time before the day when the General Court of Governors will have to decide on them.

With this view, they beg leave to express to the Governors their unanimous and earnest hope that when the Grand Committee reports to the Governors on the several tenders which shall have been made of land for the site of the new Hospital, the Governors, before deciding on the choice of a site, will cause the report of the Committee to be printed and published, and will then allow an interval of at least a month to elapse, during which the merits of the respective proposals may be open to public criticism; and similarly that when the Governors have it in view to determine on what plan the new Hospital shall be built, they will, for at least a month before they purpose to decide this question, permit public exhibition to be made of all plans which shall have been proposed for their acceptance.

The most conflicting rumours are abroad as to what the Governors really propose to do. Among other *on dits*, it is said that the capabilities of certain hospital lands north of the Thames are being tested with a view to the erection of the Hospital thereon.

MACHINE FOR TUNNELLING THE ALPS.—An ingenious and elaborate piece of mechanism has just been completed by the firm of Hawks, Crawshaw, and Co., and in a short time it will be tested at the Claxton Quarry, on the Sunderland-road, where it now is. This curious machine was originally intended to be employed in undermining Sebastopol, for the purpose of blowing up that city during the Crimean war, when our army were melting away like snow in the trenches before its almost impregnable walls. The engine for propelling the cutting machine resembles a locomotive engine, and is mounted on very low wheels. It has no funnel on the top, on account of the limited height of the tunnel; the steam will be emitted at one end. The cutting machine, to which the engine will be attached, resembles a large wheel, and a double row of teeth of the finest steel are arranged on what may be termed the spokes of this wheel. The knives of the machine are placed against the rock intended to be cut, and the wheel revolves and is pressed forward at the same time against the rock, cutting a large circular hole. A series of iron rakes are also attached to the machine, for removing the fragments of the rock cut out by the knives. We understand new machines for cutting the great tunnel through the Alps were successfully tried at Modane some time ago; and doubtless the machine manufactured by Hawks, Crawshaw, and Co. will be employed in the same great undertaking. The length of the tunnel already cut is 1,680 metres, of which 738 are on the French side, and 950 on the Italian side.—*Newcastle Daily Express*.

DUBLIN.—Workmen and labourers are rapidly clearing the ground in the vicinity of the Four Courts for the erection of the new record buildings, law offices, and Probate Court. The foundations of a commodious Court of Probate are now in process of being laid.

FEMALE SCHOOL OF ART.

THIS offshoot of the Science and Art Department at South Kensington, which has now found a home in Queen-square, Bloomsbury, deserves at every stage of its development the warmest recognition and support. In order that eligible students may have the benefit of a continued course of advanced instruction, they may compete for admission to the Training School at South Kensington, with an allowance of from five to fifteen shillings a week. Medals are annually awarded by the Government inspector; and the drawings submitted in competition for these prizes were exhibited on Friday and Saturday at the house in Queen-square, whither the school has been removed from Gower-street. Of the twenty-nine productions which have gained medals, twelve have been chosen to be sent in competition for the national medals distributed among all the schools of art throughout the United Kingdom.

Several of the works displayed on this occasion give evidence of an advanced state of student-power in the Female School of Art. Design for the purposes of useful art is not neglected, and it is in this particular branch that the school should be encouraged. Wood-engraving, too, is taken in hand, after having been dropped at South Kensington. In a frame of vignettes there is a miniature drawing of a pattern for Honiton lace, which has been commanded by her Majesty as an intended feature of the International Exhibition. The full-size design itself is also shown.

STRENGTH OF THE EXHIBITION BUILDING.

THE following report has been addressed to her Majesty's Commissioners by the professional members of the Building Committee of the International Exhibition:—

To the Commissioners of the International Exhibition.

My Lords and Gentlemen,—Feeling that it would be a source of satisfaction to the Commissioners, as well as to ourselves, as members of the Building Committee, and also a due precaution for the public safety, that the gallery and other floors of the International Exhibition Building at South Kensington should be thoroughly proved, we undertook a series of experiments on Monday last.

We have to report that, in carrying out these experiments, the various floors and stairs were put to a more severe test than they would be subjected to with the largest number of people that could possibly be assembled upon them at any other time during the Exhibition. The result of these experiments fully bear out our calculations on the strength of the different parts of the structure, and we feel perfectly satisfied as to the stability of the building for the purpose for which it was intended.

The two large domes, in the strength of which we have taken great interest, were eased from their temporary support last week, and no observable settlement took place.

The following are the particulars of the tests:—The first caused a large body of men, about 400 in number, to be closely packed upon a space 25 feet by 25 feet, on one lay of flooring; we then moved them in step, and afterwards made them run over the different galleries and down each staircase; at the same time we caused the deflections of the girders carrying these floors to be carefully noted at several places, and had the satisfaction of finding that, in each case, the deflections were very nearly the same, thus exhibiting a remarkable uniformity in the construction. The cast-iron girders, with 25 feet bearings, deflected only one-eighth of an inch at the centre, and the timber-trussed beams of the same bearing placed between these girders deflected half-an-inch at the centre. In every instance the girders and trusses recovered their original position immediately on the removal of the load.

We are, my Lords and Gentlemen, yours faithfully,
WM. FAIRBAIN, C.E.
WILLIAM BAKER, C.E.

THAMES EMBANKMENT AND RAILWAY. SOUTH SIDE.

YESTERDAY the Commissioners appointed by the Crown to inquire into and report to Parliament on this question met at the offices of the Commission in Victoria-street, Major-General JEBB, in the absence of the Right Hon. the Lord Mayor, in the chair. There were present Captain Galton, R.E., Commander Burstal, Mr. J. Thwaites, Chairman of the Metropolitan Board of Works, Mr. McLean, C.E., and Mr. Henry Kingseote.

Mr. H. H. Bird, C.E., of Robert-street, Adelphi, described a plan for an embankment on the south side, from Nine-elms to Southwark-bridge, solid, with trifling exceptions, to be constructed in the form of a river wall, with floating docks on the inner side, with access by openings in the wall. A public road would run on the top of the river wall from Lambeth Palace to Blackfriars-bridge, between 40 and 50 feet wide. There would be approaches at various places from the new road to the shore, with sluices for flushing the docks, at an estimated cost of £469,000. It was proposed that a body of river police should regulate the docks. The embankment would greatly improve the navigation, protect Lambeth from the overflowing of the tide, increase the public facilities for transit, and accommodate the densely-populated districts of South London.

Mr. HARTLEY, merchant, of Earl-street, Westminster, proposed embankments both on the northern and southern side, with a road and four lines of railway, and on the south a canal between the embankment and the shore from London-bridge to Battersea, into which the craft would pass through locks, the stream being dammed up at Battersea, and the current of the river thereby checked. The embankment on the south side would be 170 feet wide, with warehouses and residences, and on the north boulevards and gardens. The cost of the entire undertaking would be about five millions sterling, and he proposed to employ 5,000 sappers and miners in the construction of the work. As compared with the Seine and other European rivers, the Thames was a disgrace to a civilised country.

Mr. T. MORRIS, architect, proposed a causeway, 70 feet wide, on piers 100 feet apart, between Nine-elms and Bankside, Southwark, level with the bridges, at an estimated cost of £500,000.

The Commissioners then adjourned.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post*. Gold watches 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enables persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

J. W. BENSON, 33 and 34, Ludgate-hill, 46 and 47, Cornhill, London, E.C. Established 1749.

RELICS OF EASTERN ARCHITECTURE.*

AMONG the many popular delusions which certain politicians sedulously cultivate, either from ignorance or less creditable motives, there are none more pernicious or less true than that in the East there is no progress, and that civilisation in the land of its birth is brought to a standstill. In far-off Orient life may not be so "fast," and men may not "go the pace" as in the remoter West; but the absence of go-aheadism is not proof that men and things stand still, feeding on the memories of the past and careless of the future. That there is progress in the East, though at a jog-trot pace, no better evidence can be afforded than by the notes of travel of Miss Beaufort. Two maiden sisters wandered through the East, lived in the desert, camped out with Arabs, "assisted" at the outbreak of a civil war, and went their way in the true spirit of feminine curiosity, without inconvenience and without impediment. Their two only grievances arose from the chilling indifference of English ladies, when the wandering maidens, by the fire of their Nile boat, lost their wardrobes.

" * * Much linen, lace, and several pair
Of stockings, slippers, brushes, combs, complete
With other articles of ladies' fair,
To keep them beautiful or leave them neat."

That they were not reduced to the condition of Eve in her original ignorance, and left *simplex munditiis*, was owing to the generous sympathy of the ruder sex; for one lady to whom the loss of their wardrobes was made known magnanimously contributed to their outfit "the gift of one book and eye!"—(Vol. i. p. 74). The other grievance was the neglect they experienced from H.B.M. Consul-General at Beyrout, Nevins Moore, Esq. When the first fight between the Druses and Maronites occurred Miss Beaufort and her sister were living in Beit Mery, the scene of action. "The various consuls had each one sent up horses and mules to bring down their respective countrymen, protected by their own janissaries. The English Consul had, however, sent up no one. We had brought several letters of introduction to the Consul, but during our stay in the town he had never called." Oh! Consul-General, is this your gallantry to two unprotected females on their travels? Grievances worse than these would not be the result of a journey to the Crystal Palace or to Epsom, when Londoners are holiday making; and sure are we that not in France, still less in England, would wandering maidens, who insisted on being introduced to the wife and family of every man they met, have so large a charter accorded to them, be granted such license, and enjoy such freedom from offensive proceedings, as had Miss Beaufort and her sister. The progress of the East in this respect leaves England and France, the leaders of Western civilisation, "nowhere." Contrast the ease and security with which these ladies journeyed to and fro with the fate of an officer of Engineers, who attempted a tour of Egypt just half a century ago. Poor Berrington started from Malta, with books, instruments, and letters of introduction to Mohammed Ali. He was shipwrecked before landing at Alexandria; crossing the desert, with a caravan from Cairo to Suez, he was robbed of his provisions and almost starved; he was compelled to sleep in a tent occupied by plague patients, two of whom died during the night. At Suez he was beset by further difficulties, and obliged to return by the next caravan to Cairo; he was overtaken by the simoom, which killed many of his fellow travellers; and at Cairo he found the plague raging, which fastened on him and slew him at Zante, as he was making his way back to Malta. Now Cairo is as free from plague as London, and Shepherd's Hotel is almost as luxurious as Meurice's, and certainly much cheaper. Suez is the Holyhead of the London and Bombay line, and there is no more danger of starving on the journey through the desert than there is while crossing Chatmoss. Is not this progress? Why, under the shadow of Palmyra, in the midst of Arabs who carry their lives in their hands, Occidentals have been known to exchange lovers' vows with as much security as if they were on a picnic to Hampton Court, not thinking it worth while to ascertain if the mash'lah by their side covered a slumbering Arab or a dozing European.

It is a melancholy reproach to our thirst for knowledge or spirit of inquiry that the researches of Western savans and travellers have proved more destructive to the monumental achievements of former ages than centuries of neglect and of Oriental vandalism. Since Napoleon's invasion of the East, down to the appearance of the latest importation from beyond the Atlantic, in the shape of a Yankee note of interrogation, transformed for the time being into a lotus eater, the East has been ruthlessly pillaged to stock museums or furnish mementoes of travel. A few years ago the present Earl of Aberdeen—how unlike the "travelled Thane!"—induced the Pasha of Egypt to clear out the famous rock temple of Abû Simbil, in order that he might behold its glories; but, with an indifference or contempt for the diffusion of art-knowledge, and a positive unkindness to those who were to come after him, the noble lord omitted to ask that the temple might be kept clear. Consequently, as soon as his curiosity was gratified, the fellahs threw the sand back again, so that the mysterious glories of the interior can be but imperfectly and with difficulty discerned, and yet the works which Belzoni and Lord Haddo have been the only Europeans, perhaps, to behold entire, must be well worthy of examination by more critical eyes.

The light which passes through the small opening enabled us to distinguish the features of that far-famed hall, which sinks deeper and deeper into the heart the longer you behold it. Four colossal figures stand at each side of the middle aisle as pillars, dividing off the narrow and dark recesses behind them; all the light there is falls on these eight Ramesses, now become Osiris, imbued with his almost superhuman strength and majesty and divine calmness, the swathed legs and the unearthly repose of the face bespeaking the god of death as the crook, and the knotted scourge portray the god of judgment.

Besides this hall, there are fourteen chambers in the temple, all perfectly dark, of course, though before the sand had choked up the entrance, the four small figures which sit on an altar at the farthest end of the adytum facing the door, must have been dimly illuminated by the setting sun (the temple faces the east), and they must have appeared to look with their stony eyes along the whole length of the temple and across the sacred ever-flowing Nile, to the steep purple overhanging mountains beyond its green banks. On the walls of the outer hall are represented the historic deeds and conquests of the great Ramesses; the other chambers are also sculptured all over, and two or three of them have a stone divan extending along the sides, but the pictures are so blackened with smoke as to be very difficult to decipher. Of the four colossal figures of the facade three only are quite uncovered by the sand, and one of these has been destroyed to the waist, while of the fourth only the face is visible. These enormous figures—they are 66 feet in height without the pedestals—are of the great Ramesses II. seated on his throne; his posture, the hands on the knees, signifying his rest after many conquests. Till I saw these figures I never could believe that features of such gigantic size could express such grace and benevolence so sweetly and grandly mingled.

When Gerard de Nerval swung out his exhausted frame under a leaden cheerless sky, and in a den of infamy, he had been dreaming of the East, of its glories and its mysteries, and he leaped into eternity wearied of our civilisation. How different was his jealous love for oriental art from that of an American, who, the authoress relates, pulled down the alabaster slabs lining a temple, that he might select the *moreaux* to be broken off for convenient carriage to his museum. Was it Mr. Seward, who about the time referred to was travelling in the East? There is an evident psychological relationship between the conception of such an act and the device of the stone fleet to blockade Charleston. French members of the Académie des Inscriptions have blasted down portions of structures, to save the exertion of climbing for the purposes of inspection. Recently, the French army defaced a rock tablet at the mouth of the Dog river, commemorating the passage of an Assyrian army, to afford a surface for the incision of a French inscription, glorifying the Emperor, the French General in command, and the troops. A couple of young English travellers did their best to deface the French profanation, and so created an occasion for Mr. Nevins Moore to exercise his diplomatic skill, as usual fruitlessly and without credit. The ruins of Ba'albeck are degraded by incised and painted names of the celebrities and many an *outs* who have visited the spot. Arabs break down columns for the sake of the clamping irons. Part of Palmyra is invisible from the fellahs having built their hovels amid the ruins, while the convulsions of nature now and then help the work of destruction. If the reader be curious to realise what the world has lost, let him compare the drawings of Wood and Dawkins of Ba'albeck with those made a century later by Roberts.

What Cairo is now, we all know, if not from actual inspection of the town, at least, by the overland mail. Yet, according to Henry Blount, who travelled in Egypt in 1634, the number of churches and mosques then amounted to 35,000, the noted streets to 24,000, some of which he found two miles long. The extent of the city, he reported, was thirty-five or forty miles in circuit. Allowing for travellers' embellishments, the city was evidently much larger than it now is, and there is too good reason to fear that the contraction of its limits has destroyed structures and works of art that would be priceless now for architectural and ethnological purposes. When the Hindu Sipahis penetrated into Egypt by the Red Sea to join the army of Lord Hutchinson, they imagined they had found at Denderah the temples of their faith, and of a cognate race. They were exceedingly wrath with the Egyptians for the neglect of their gods, and they performed their devotions in the temples with all the ceremonies practised in India. Yet the Temple of Denderah is of comparatively recent date, quite a modern antique, according to Miss Beaufort, who writes:—

It loses all interest of detail after the temples and tombs of Thebes, the hieroglyphics broadly testifying their modern age by their poorness of outline and bad arrangement; its nearly perfect preservation, however, renders it a good explanation, in its plan and general construction, for the more ruined but more perfect temples farther on; the great square court succeeding the pylons usual in the larger temples is here wanting; but the magnificent portico makes up for the loss. This portico, leading to the fine hall and lofty adytum within, has scarcely even a chip on the stone; it is supported by twenty-four grand columns with square capitals, to which the colossal face of Althor is affixed on each side; very sweet and dignified is the head, however singular the adaptation of a small pylon, which is inserted below the abacus as her head-dress; the whole front is richly covered with hieroglyphics.

But Egypt is now "used up" by our Sir Charles Coldstream; its mysterious glories are twice told; and, if we would essay "pastures new," we must follow the wandering maidens to Syria and Palestine.*

LAMBETH BRIDGE.

AT the half-yearly meeting of the shareholders, held on the 13th inst., the Directors reported *inter alia* that they had "arranged with the London Gaslight Company to lay down two mains of 18 inches diameter, which has required an increase in the strength of the structure, for which your Company receive a payment of £3,000, with the advantage of the bridge being lighted free of cost."

Mr. Barlow, the engineer, reports that the cylinders of the Lambeth pier are complete to the level of high water, and have each been tested with 400 tons of iron. The cylinders of the Westminster pier are in process of sinking, and will be ready for testing in less than three weeks. The experience of these operations confirms the undeniable economy and safety of the system of cylinder foundations. The abutments on both sides of the river are progressing rapidly. On the superstructure Messrs. Newall are about to construct a temporary building on the Company's property on the Lambeth side for the manufacture of the cables, and they expect that the cables will be complete by the 15th March. The ironwork is in progress at the works of Messrs. Porter and Co., and a portion has been already delivered. It is considered due to Messrs. Porter and Co. to state that their work has been executed in a highly satisfactory manner. If the rate of progress during the last two months be continued, the bridge will be opened in May.

* To be continued.

* "Egyptian Sepulchres and Syrian Shrines." By EMILY A. BEAUFORT. Longmans, London.

MR. SMIRKE'S LECTURES ON ARCHITECTURE AT THE ROYAL ACADEMY.—LECTURE IV.

WE have hitherto, this season, been engaged in discussing various, and, truth to say, somewhat miscellaneous subjects connected with architecture, suggested by a reference to some of the literary treasures contained in two public libraries. I have but dipped, very cursorily and superficially, into those collections. Much profit might, no doubt, be derived from the prosecution of a deeper, closer, and more systematic examination of them; but I do not consider myself justified in pursuing the inquiry farther, at least for the present, so brief is my appointed course that it is now quite time I should quit the mere literature of our subject, and proceed at once to the consideration of the principles that should regulate the practice of the art.

We must remember that architecture is strictly a practical art; far more so than either of the sister arts of painting and sculpture.

Reading and thinking are, no doubt, processes well adapted to clear up and make straight the path before us; they enable us to see our way, and understand the course we should take; but it behoves us also to accustom our minds to the carrying out of the principles so acquired. We may learn much of a country by studying geographical treatises, but it is as a wayfarer on its actual roads that we best become acquainted with it.

Let us, then, enter upon a detailed and practical consideration of the art of architectural design. Such a consideration seems naturally to divide itself into two very distinct general heads, namely, design as it affects exterior architecture, and design as it affects interior architecture; each being very different from the other in its aim and object. It would, however, be a serious error to suppose that the exterior and interior of a building should not be designed strictly in relation to each other. I hold it to be a serious defect in design to so shape the exterior of a building as not to convey to the mind of one viewing it at least some general idea of the form, and, when possible, even of the general arrangement of its interior. Still the treatment and the nature of the effects and impressions to be produced must necessarily be so different that I think it will be very convenient and proper to regard these two subjects distinctly and separately.

Let us, then, devote this evening to the consideration of the principles of design as they affect the exterior form of a building, and next week we will deal with the interior.

I need not insist on the paramount importance to an architect of a careful study of external architecture. There are few considerations that lead our mind so forcibly to a sense of the importance of a right cultivation of our art as the consideration of the permanence and durability of her works. Fifteen generations of men have passed away since the erection of those buildings which date from the decadence of mediæval art, and there are buildings still surviving the wreck of time since the erection of which a hundred generations have passed away. How grave a responsibility, then, it is which the architect takes upon himself! If his work be one of ordinary solidity, he must count upon a succession of critics, and be prepared to submit his handiwork to a varying standard of taste, varying to an extent that can scarcely fall to the lot of either of the sister arts. The sculptor's labour is bestowed on objects of comparatively little magnitude, and their defects as well as their beauties have to be searched out in order to be appreciated, or even observed. The painter's field of labour is, perhaps, still more limited and still less conspicuous; and it is painful to contemplate the perishable nature of the productions of his genius. All the love and reverence with which a picture may be regarded can but prolong its existence through a few centuries, and all the care with which it may be cherished may be thwarted and set at naught by an imperceptible worm, a careless spark, or even a neglected window-blind!

Again, if the hand of a master have failed the painter in the execution of his task, or should he, by one of those caprices from which even the highest genius is not always exempt, have produced a work with which, on after-reflection or on further study, he feels himself dissatisfied, he can turn his picture to the wall, or even paint it out. Not so the votaries of architecture. To them alone is it given to occupy the highways and public places, and perpetuate their glory or their disgrace in monuments which are at once conspicuous and durable. Is there any consideration better calculated than this to make us earnest, diligent, and studious? Is there any consideration more powerful to warn us from an indulgence in foolish excesses, or puerile capriciousness, or to induce us to proceed with a measured and a cautious step? To see that every line is founded on sound reason and just calculations? This is a duty which we owe alike to ourselves, to our patrons, and to our art. Let us seeking after present, but very evanescent, praise render us unmindful that our work, however crudely considered or hastily conceived, stands, and will stand, exposed to the unsparring judgment of successive generations.

It is obvious, then, that the composition of external architecture is of the utmost importance to the character of the architect, and demands, therefore, his first and most earnest attention.

Now, in the mechanical construction of a building, what consideration may be regarded as the most important of all? Undoubtedly its foundations. Let your superstructure be ever so just in its proportions, or beautiful in its decorations, if its foundations be faulty the architect can gather no laurels; the structure may drag on its unseemly existence for years, but it can win for him no applause. Nor is this regard to the foundations a mere consideration of mechanical construction; it is also a question of æsthetics.

If your basement be plainly adequate to the superstructure, if it be of fitting character and of competent proportions, you will have gone far to secure a successful result for your whole design.

I believe that in the kindred arts all masters agree in regarding the pose of a figure, or of a statue, a subject of essential importance; and I believe it to be a fundamental rule that the feet should be readily traceable, that there should be no doubt in the mind of a spectator as to how, or upon what, the human body is supported; and, of course, the eye demands that the footing shall be adequate to its task.

So, also, is it in our art. The eye must be satisfied that a building has a firm, visible, and competent basis.

Sir J. Reynolds compares the background of a picture to the base of a building; the comparison is certainly felicitous, and conveys an important lesson both to the painter and to the architect. Each should be quiet and solid, not forcibly obtruding itself upon the notice of the observer, in the one case by any inordinate brightness and glitter, nor in the other case by any needless multiplication of parts or obtrusive enrichment. Like the setting of a gem, the background of a picture may greatly enhance the effect of the subject, or seriously detract from it, according to the degree of judgment exercised in its treatment. So may great value be given to the superstructure of a building, by the judicious treatment of its base. But, besides these æsthetic considerations, there appears to be a peculiar practical propriety in giving to a building a base obviously competent to receive and support it. It is not enough to surmise, or presume, that a building has an adequate foundation; it is not enough even to know, as a practical man, that a building has an adequate foundation; the eye needs to be satisfied as well as the mind; the fact should be patent and palpable; otherwise a sort of uneasiness is produced on the mind of the observer, which it is the duty of true art to avoid; for it is one of the most legitimate ends of all art to yield pleasure, not pain, to the intelligent observer.

I need scarcely remind you of the elaborate attention paid to this especial subject by the accomplished architects of ancient Greece. Confined as the Greek temple ordinarily was within its *temenos* or sacred enclosure, and, therefore having its facade fully seen only from a point of view somewhat near, no very lofty substructure was necessary in order to give it dignity; but that the Greeks were fully sensible of the value of an adequate base, and of the importance of giving a due elevation and spread to the visible footing of a building, is manifest in all their works that remain to us.

The graduated plinths are a peculiar characteristic of most, I believe, of all of their temples, and seem to give great propriety and significance to the term "*Nascentia templa*," used by Martial. The spreading steps of a temple seem truly to link the structure with the earth it rests upon, and thus the building may well be, figuratively, said to grow out of it.

Instances are not wanting of casual irregularities of site having been made subservient to the production of very noble substructures.

It is true our knowledge of Greek exterior architecture is mainly derived from sacred edifices; but so attached were they apparently to the type presented by the temples, that they were satisfied to build their basilicas externally in conformity with it. The Basilica

at Pæstum, for example, has its substructure perfectly similar to the temples adjacent to it. The tombs in Lycia, with which of late years we have become familiar, are remarkable for the character of stability and permanence given to them by their bases.

Generally, we may with truth say that the remnants of Greek art which survive for our instruction are amply sufficient to prove that the refined eye of Greek artists failed not to recognise the æsthetic importance of a competent substructure.

In Roman buildings the general use of a podium is an evident recognition of the same feeling. Vitruvius treats the podium as an important, if not essential, feature in the composition of an order, and he gives us the proportions that were held in his day to be proper for this member.

The interruption of the podium of a colonnade, and the forming a break in it under each column, naturally led to the suggestion of the pedestal, which eventually became an integral part of every order. This pedestal may be regarded as a strictly Roman feature, nor am I aware of a single purely Greek example; the nearest approach to it being at the singular temple at Segesta, where the breaking of the upper plinth or step on which the columns stood, forms under each column a cubical block of masonry resembling a plinth; but even this, there is reason to believe, is rather due to the unfinished state of the building than to design.

When once adopted in the architecture of Rome, the pedestal became well-nigh universal, and continued as long as Classic architecture retained any of its ancient purity. In the grand style of Roman art, that art which it has been too much the fashion, both of the ultra Greek on the one hand, and of the ultra Goth on the other, to contemn, but which was an art, in its best days, most impressively marked by the greatness of manner which well became the masters of this civilised world,—in that art nothing is more striking than the skill shown in the advantageous placing of their buildings. The eye of the artist is everywhere apparent, when we examine the topography of ancient Rome, whilst the Villa of Mæcenas, the Temple at Tivoli, and many other familiar examples might be adduced as evidences of the judgment and taste which guided the Romans in determining the sites of their more important buildings.

The practice of mediæval art fully concurred with that of the ancients in attaching importance to the mode of placing their buildings, and in the due appreciation of the advantage of a bold and massive substructure. It would, indeed, be difficult to find an example, during the best period of mediæval art, where the basement had not been plainly made the object of especial study and design; although it is certainly obvious, from the great diversity of their practice, that our ancestors had no very fixed rule for their guidance in proportioning their podium to the superstructure. They evidently felt, however, very strongly the good effect produced by marking forcibly the base lines; indeed, those lines are, perhaps, the only very strongly marked horizontal lines in a building of the best age; the stringcourses were held of little account, and the cornices were often very moderately pronounced and constantly interrupted in various ways, but the base lines very rarely. Deeply shadowed and prominently marked, they never fail to arrest attention.

When we carry down our survey to that period in the history of our art which immediately succeeded the prevalence of mediæval forms, we shall still find a full recognition of the importance of the base in every architectural composition. In the Venetian buildings of the quattrocento period notable instances might be adduced, and there is no better evidence of the refined taste of the very early master, Alberti, than the noble basements which he gave to his works. The new front he gave to the Church of St. Francesco, at Rimini, appears to me to exhibit a very fine feeling in this respect. In the works of Bramante, of Raffaele, of Giulio Romano, and of Palladio, you will find the dignified pose of their buildings well worthy of most careful study—a study which it is very certain those distinguished artists never failed to bestow on the subject themselves.

Descending in our view from the period of the Early Renaissance down to the less refined, though, perhaps, still more picturesque, manner that succeeded, we still find the best artists never neglecting that important part of their compositions, the base. Indeed, they amplified the idea, and we find terraces worked up with extreme ingenuity, so as to combine with, and enhance the effect of, their architecture, spreading out, as it were, the base of a building so as to connect it with the ground it stands on, rendering it sometimes scarcely obvious where the domain of the architect ends and where that of the gardener begins.

But I hope that enough now has been said to satisfy you of the attention that is due to the preliminary subject of basements, and I feel confident you will concur with me in what I said at the outset, that, in order to afford unmixed pleasure to the critical eye in viewing a building, the mind must feel satisfied of its stability, and that there are no means so proper for that purpose as providing a good and sufficient visible foundation.

The subject now leads us naturally upwards to the superstructure, and, without entering at present into any question of style, I think that our first business is to consider architectural character in its broadest sense. When we propose to ourselves to design a building, the very first question that should present itself ought to be, what character will it be most fitting to impart to our work? For we may be well assured of this, that however exactly our building may be in accordance with the ordinances of architecture, whatever may be its merits as a composition, however unexceptionable may be its details, if the general character of the building be not in harmony with its purpose a fundamental defect exists for which no amount of art will compensate. Whereas, if the character of the building be in accordance with its purpose and destination, a favourable impression is produced which reconciles us to many blemishes of detail.

I would cite, for example, the principal front of the Imperial Palace at Vienna—a building which has all the worst vices of the most corrupt German school, yet possesses in its well-supported character the great redeeming merit of appearing really like what it is, a great imperial residence.

I would cite, also, the garden front of Versailles—a subject familiar, probably, to most of you; as an architectural composition it is, I think, sadly deficient in character, with little claim to the attribute of grandeur beyond its enormous length, and but feebly suggesting the idea of a great monarch's residence.

To seek for an illustration nearer home, I might point to Whitehall Chapel, a building, the architecture of which seems remarkably expressive of the festive purposes for which it was originally designed; and this illustration is the more instructive when we have regard to the manifest unfitness of the building in all its features, internal and external, to its present purpose. There never was a more grievous misapplication of a fine piece of architectural composition.

I feel the extreme difficulty of defining this quality of character with that precision which one who assumes the office of a teacher ought ever to aim at; but it appears to me to be a consideration involving so much more of feeling and judgment than of abstract reason, or of what logicians term dialectics, that I fear it would be a hopeless attempt to lay down definite rules for insuring propriety of architectural character; we have neither numbers, nor figures, nor words, by which the relative merits, or the essential attributes of art can be gauged or compared with mathematical exactness. We want, and shall never find, a golden mete-wand which shall serve to reduce genius to a matter of calculation, or to supply an unerring criterion of good taste.

We may, however, safely say, generally, of a building, that its character is well conceived, if the intelligent observer is at once impressed by the congruity of its aspect with its destination. I do not mean that a hospital should look lugubrious, or that statues of maniacs should decorate the portals of a lunatic asylum, as was the case at old Bedlam; that would be a gross misapplication of the principle; yet, in such structures as these, there is a plain propriety which forbids the architect to admit an air of levity into his work, or to indulge in fanciful decoration.

To give to a court of justice the rant air of a place of public amusement, or to give to a private gentleman's residence the aspect of an ecclesiastical structure, or of a crenellated fortress in the days of catapults and cross-bows, would be to commit a solecism which no abstract ingenuity of design, nor antiquarian correctness, could possibly justify.

Quite irrespective of style, much of the character of a building depends on its general treatment. I apprehend that a painter who takes in hand some great historical picture would adopt a mode of treatment widely different from that which would guide him in painting some humble piece of *genre* painting, or of still life. So also the architect should certainly adopt his mode of treating his subject to the nature of the building. To design a small village church like a miniature cathedral would be a vulgar error, and the formal, dignified simplicity of a Greek temple would be grossly misplaced in the suburban villa.

To enforce so plain a truth seems almost to demand of me an apology, and yet experience proves that this congruity of style is not seldom least sight of.

At Potsdam, for instance, we see the elegant and stately shaft of a Mahomedan minaret, decked with all the graces of Oriental architecture, degraded to the vulgar uses of a steam-engine chimney built for the supply of water to the Royal kitchen garden.

So we may find, nearer home, that these freaks of genius are not wholly wanting. An admirably-designed Egyptian temple, with its richly-sculptured decorations illustrating the triumphs of Sesostris, forms the façade of a cotton mill.

In all cases, I should say, let the purpose of a building determine its external character; and although the forms of architectural composition may not be so eloquent as always to express very distinctly the nature of those purposes for which a building was erected, yet, let the architect have a care lest he invite ridicule by those flagrant inconsistencies which result from an indiscriminating adoption of an architectural style, in total forgetfulness, or disregard, of the future destination of his work.

Besides the influence that the uses and destination of a building should exercise on the mind of a designer, in determining its architectural character, there is yet another consideration which should never be overlooked by him in making his design.

It is with truth that Pope teaches us to

"Consult the genius of the place in all."

This *genius loci*—the local circumstances of the spot—should not fail to have its due weight in the selection of style and character. For example, amidst picturesque and varied natural scenery, a flat, formal, rectangular façade appears disharmonious and misplaced. On the other hand, in the streets of a city, some uniformity of outline seems preferable to that endless miscellany of houses of varied heights, shapes, and sizes, which make some of our large streets so pre-eminently ugly. It is no uncommen error to design a street façade wholly regardless of this consideration. We too often see, in the midst of the irregularity of ordinary street architecture, an elevation with its centre and wings, a pediment here and a projection there, the whole presenting a complex composition all crowded into a small compass, producing painful confusion instead of that repose which, amidst such discrepancies of form and fashion, the distracted eye so much desires to dwell upon; and this is often done to the serious disarrangement of the building itself, by detracting from its individual importance.

A simple, unbroken front might have claimed our attention, at least, if not our admiration; whereas, with its front broken up into wings and centres, the building loses its unity and individuality, and each fragment of its composition adds but to the general disorder of the scene. We shall find this distinction steadily kept in view by the best masters.

I need but to remind you of the noble specimens of civic architecture with which Florence, Vicenza, Verona, and other great cities in the north of Italy abound, where you will never find a fantastic variety of outline aimed at, but rather that broad simplicity of treatment which is so well calculated to impart individual dignity to each structure.

Whilst, when we turn to the works of the very same masters amidst the beautiful hills of the Brianza, or on the banks of the Po and the Brenta, we see them there relaxing that severity of manner, giving to their plans a playful variety, and to their outlines a picturesque freedom.

Now, with regard to exterior design, the most prominent and important principle of design is form. It is form that is mainly instrumental in giving expression to works of architecture. Color, ornament, the elaboration of the smaller features of a building, such as doors, windows, and the like, all these are, no doubt, useful contributories to the great object of giving character and expression to a building; but they are not alone, and of themselves, sufficient. It is the dome, the spire, the portico, the arcade; these, and such as these, are the forms on which a building mainly depends for its effect.

When these main features affecting the outline of the building are right and true in their proportion and collocation, the design is sure to be successful in securing our respect at least, and fixing our attention; but if these fail, if these great and leading features be disproportioned or out of keeping with the plan and purpose of the buildings or otherwise mismanaged, then all the enrichments of art are exhausted on it in vain; and the most laborious and ingenious details are but labour lost.

In this respect, as in many others, architecture and sculpture are kindred arts. The most beautiful details, the most exquisite finish, the highest polish, would fail to invest a statue with the true character of high art, if it be wanting in fine form; whilst the rudest sketch, the simplest outline, from the hand of a M. Angelo, or a Flaxman, is stamped with immortality.

I would by no means inculcate negligence of detail, nor of finish, nor would I have you in the least degree regardless of the charms of ornamentation. Sir Joshua Reynolds says, with his wonted truth, "As life would be imperfect without its highest ornaments, the arts, so these arts themselves would be imperfect without their ornaments." I do not, I say, seek to depreciate the value of ornamental details. They may most legitimately excite our admiration, by their individual beauty, or by their happy adaptation to their place, or by their rich abundance, or by the judicious parsimony with which they are introduced; and they may act with the utmost effect in giving scale to our work. On this latter ground, indeed, rests the main justification of that crowding together of minute details which characterises the later schools of Medieval architecture.

But ornament, like a highly tempered weapon, needs much caution in the handling. Not only must it be of a kind suited to the character and purpose of the building, but in quantity also it must be carefully apportioned.

These considerations should induce you to attach much importance and value to the proper study of ornamental details, but do not forget that such details should take a secondary place in your professional estimation. It is, I repeat it, the leading and prominent features of your design which are of paramount importance. The experience of every one must be able to afford illustration of this truth, viz., that the most impressive effects of architecture are irrespective of mere ornamental details. After having imperfectly seen a building for the first time at night, or in the shades of evening, and having been deeply impressed with a sense of its grandeur, how often are we surprised (perhaps, indeed, disappointed) on the morrow by finding it of insignificant dimensions, or of mean construction! I have even found in the morning that I have been looking over-night with much interest, perhaps with admiration, at what has turned out to be a temporary scaffolding of poles and tarpaulins. It was its fine outlines, its broad *chiaroscuro*, its deep shadows, which had produced this profound impression. Such is the magic of form, and of an effective management of lights and shadows in our art.

I have but little doubt that the striking effect of a Gothic cathedral is mainly due, not to its intricate enrichments, not to that exquisite elaboration of its detail, upon which indiscriminating admirers of middle-age art are too apt to lavish their exclusive praise (and to which students, allow me to say, are too apt to bestow their exclusive attention), but to the breadth of its main features, to the variety of its masses, and to the grand and surprising effects produced by its lights and shadows.

I am the more led to dwell on this point, because ornament exercises an extremely seductive power over the mind of younger students. Florid beauty in architecture may be well compared to an over-ornate style in oratory. We are dazzled by the splendour of phrases, by the flow of brilliant words; the flowers are strewn before us in such charming abundance that we are led away by our admiration of them, and forget to exercise a calm and rational judgment on the main merits of the production, as a work either of logic or of rhetoric; and we are in no mind to inquire into the fitness or propriety of the decorative adjuncts.

So it is that the younger practitioner in our art (and, perhaps, in the sister arts), is easily reduced, through an erroneous estimate of the value of this secondary object, or by a latent desire to display his dexterity in superficial embellishment, to impair the breadth and solidity of his essential design.

I trust that I have said enough to establish in your minds my position that the vital principle of architectural design is form.

I think that there are three principal and very distinct sources of beauty in architectural composition:—

1st. There is a beauty in the aptitude of a form; that sense of satisfaction which the mind experiences when perceiving the nice adaptation of any object to its purpose.

2nd. There is the beauty of symmetry: that pleasing impression produced, I know not why, by regularity of arrangement, and by exact correspondence of the several parts. Perhaps this sense of the beauty of symmetry may be founded on the almost universal pre-

valence of unsymmetrical arrangement in the works of nature, whether in animate or inanimate creation.

3rd. There is the beauty of the picturesque: a pleasing impression (differing very widely from the last, and sometimes almost opposed to it, and equally difficult to account for), which is made on the mind by irregular but not confused or discordant combinations of form.

I do not pretend that under these three heads all kinds of formative beauty can be classed, but they may be quite sufficient to engage our attention on the present occasion.

It is not only good taste, but common sense, that teaches us that a form should be fitted to its purpose; and, as I have said, the fulfilment of this first great condition is in itself an element of beauty.

But I am afraid that the more dry, unimpassioned beauty resulting from the quality of fitness, however it may satisfy the engineer, will hardly suffice to meet the aspirations of the architect.

As sensible men, we cannot admit the beauty of any object that is irrational, or idle, or inapplicable to its purpose; yet, as artists, or intelligent observers of art, we desire this, and something more. I think that this kind of beauty and the distinction which I am endeavouring to draw, may be illustrated by a very simple comparison between two familiar forms, that of the early Classic, and that of the early Medieval art. Both are so far beautiful, inasmuch as both are perfectly adapted to their purpose; both convey in the simplest and most effective manner the vertical pressure of the super-imposed weight down on to the circular shaft, whose office it is to bear that pressure.

Both are alike honest and simple; but an absence of refinement, not to say a rudeness, characterises the Norman capital; while the more ancient type, although honest and simple enough, gives evidence of a more refined feeling, a more skilful working out of an idea, a quality which distinguishes the Greek artists from all others. The parabolic curve of the echinus shows a nicety of execution which the mathematician only can fully appreciate, or even comprehend, but the higher merit of which all can feel.

It is said by Cicero "*Venustas et pulchritudo corpora secundum non potest a valetudine.*" We, in like manner, might say that it is difficult to distinguish clearly between the beauty of an architectural form and its strength or ability to fulfil its task. This quality of suitability of form will ever be held in popular esteem, for it can be understood and perceived by all, whilst it is the privilege of the few only to estimate æsthetic beauty at its true value. In this country, especially, where the general mind loves to hover in the lower atmosphere of practical science, and soars reluctantly into the higher regions of æsthetic, this utilitarian quality has peculiar attractions. There are thousands of otherwise highly educated minds which distinguish no superiority in a Greek vase over an ordinary garden pot. Both, they will say, are alike adapted to their purpose; both fulfil their destinies with equal efficiency, therefore both are alike worthy of our approval. I have known a critic of this school condemn to utter ridicule a colonnade of finely proportioned stone columns as being a clumsy contrivance, inasmuch as they are, perhaps, 4 or 5 feet in diameter, whereas plain iron posts, a few inches only in diameter, would have answered every purpose.

To answer such criticism is but labour lost, and the sorrowing artist has but to sigh and pass on.

"Miserecordia e giustizia gli sdegnia,
Non ragionam 'di lor, ma guarda e passa."

I now proceed to the second source of beauty, Symmetry.

Our great master, Vitruvius, thus instructs us: "Symmetry," he says, "results from proportion. Proportion is the commensuration of the various constituent facts with the whole; in the existence of which symmetry is found to consist; for no building," he says, "can possess the attribute of composition in which symmetry and proportion are disregarded."

It may be difficult in few words to express all that is intended to be comprised in that word symmetry; but there can be no doubt that the great balance and correspondence of component parts, and the regularity of their general arrangement, which constitute the essence of symmetry, is a never failing source of pleasure to the critical eye; and here we perceive (what I have already adverted to) an instance of the analogy which our works bear to those of nature, who, in her greatest work, man, the human frame, has set before us an eminent example of perfect symmetry.

This quality has ever been eminently architectural. We recognise the attribute of symmetry in the avenue of Sphinxes at Memphis; in the façade of a Greek temple; in the long-drawn aisles of a Gothic cathedral; in the stately colonnades which surround the cortile of St. Peter's. We find it in its highest condition in the works of the best Italian masters; pre-eminently, perhaps, in the works of Palladio. A want of symmetry in parts, where its want is patent, is a fundamental defect which no art can hide, and for which no beauty of individual parts can compensate.

The want of due proportion between the dome of St. Peter's and the body of the building has been often remarked by critics, and not without ground, as an instance of this defect, and I might cite an example of a like defect, although under very different circumstances, at Munich. There the enormous statue of Bavaria crushes into Lilliputian insignificance the otherwise pleasing colonnade which accompanies it. In this case, had it been the artist's purpose by this interchange to enhance the size of his statue (whose bulk may be comprehended from the fact that twenty persons can find sitting room in the head) he might have been welcome to sacrifice a whole hectomètre of life-size statues around the feet of his colossal image; but it was treason to architecture thus to reduce a fine Doric portico to the proportions of a plaything, and to sacrifice the dignity of our art in order to magnify the vastness of his figure.

I proceed now to the third source of architectural beauty, viz., that resulting from the picturesque.

If there is difficulty in defining symmetry in few words, a succinct definition, or, rather, description, of the word picturesque is far more difficult. As I have said last week, there is no quality which it is more dangerous to affect than this, for the spell is at once broken, and the author loses the reward of his art as soon as it is perceived that there has been a laboured effort made to produce it: like the Spartan rogue, who only gained a lawful exemption from punishment for his theft by the dexterity with which he contrived to commit it.

The ecclesiastical and castellated piles of the middle ages are perhaps the most striking as well as the most familiar illustrations of this high quality of art, if art it may be called, where concealment of art is the best proof of its influence. But I last week sufficiently discussed this subject of the picturesque.

But there is a principle which I should notice here as being applicable to all large architectural compositions, and to none more so than to those of picturesque character. I refer to a certain subordination of the various parts of a composition to one predominant feature or group.

In every large composition, whether it be a building, or, as I believe, a picture, a kind of unity should be preserved by concentrating effect; by giving, not indeed an undue preponderance to any one portion of the design, but a decided and clearly marked preponderance to one portion, for I think it is a remark of very general application, that where interest is scattered it is sure to be weakened.

Our own St. Paul's is an instance especially in point, and affords a remarkable example of happy adjustment of its various parts, giving to the dome just importance enough to secure its preponderance without overwhelming the subordinate parts of the design.

The superiority of the effect of those cathedrals, such as Salisbury, Lincoln, Lichfield and others, which have main central spires, over those where that main feature is wanting, such as Westminster, Winchester, and Peterborough, is also an obvious illustration.

It was, no doubt, to some æsthetic consideration of this nature that we owe the noble gate towers of our colleges, and some of our old baronial residences, such as Bureleigh, Knowle and the like. These central features, rendered forcible by their superior height and enrichment, connect, as it were, the various parts of the composition, giving it that unity which, as I have said, adds so much value to a design. I might name Greenwich Hospital as a building which must be regarded as very deficient in this respect; and I can hardly doubt that this building, as we now see it, is but part of a larger and more connected design, which its distinguished author was unfortunately unable to realise.

You will have observed that in the somewhat desultory remarks I have addressed to you this evening, the subject of styles has been but slightly touched upon.

This has arisen from no want of due appreciation of the importance of that subject. There is no doubt whatever that a thorough, discriminating knowledge of the several recognised

styles that have prevailed in the more highly civilised countries of different ages, forms an essential part of the education of an architect. But I believe I shall be best fulfilling my duties here by drawing your special attention to those broad principles of design that seem alike applicable to all styles; to a right understanding of which principles, the acquirement of a knowledge of details must, as it seems to me, be always subordinate.

It would, doubtless, be taking a very narrow view of the study of the art, to confine our admiration or to limit our attention to any one style, whether it be that which flourished under Pericles or that which reached its culminating point under Saint Louis or our Edwards, or that which left in the great municipalities of North Italy enduring monuments of originality and genius.

The time may come when architecture, unencumbered by prejudice or pedantry, may cease to feed on the past, and take a loftier and nobler flight.

Two revivals have marked the history of modern art. There was a great revival in the fifteenth century. Nothing could exceed the enthusiasm of the artistic world when Lorenzo assembled around him the scholars and artists who effected that great change; but with all their ardour there was no want of discriminating judgment. They dug up, and measured and studied, with minutest care, the works of the Classic ages, but they wrought themselves in an unfettered spirit.

The style of antiquity was by them so modified to suit the wants and habits of modern civilisation, that their works became as much marked by originality as by beauty. It may be, indeed, questioned whether the world has yet seen men altogether equal to some of the quattrocentists.

Let us have a care that the second revival—that of the nineteenth century—is not marked by a narrow, sectarian spirit, and by the ignoble results inevitably attendant on a blind, servile, superstitious adherence to precedent—a feeling from which the great movement of the fifteenth century was so entirely free.

No doubt, the arts have advanced much since painters habitually drew the heads of men and women with their elongated eyes placed somewhere about their temples, and represented their horses stepping out with both legs together on the same side. But it is undeniable that in our art we have yet much to unlearn, many prejudices to dismiss, much rust to rub off before architecture can take its true place.

It may be long before a Giotto or a Bacon arises in our art, but we may look forward hopefully to the result of a combination of many minds acting in an earnest spirit and guided by right principles.

ROYAL HORTICULTURAL SOCIETY'S ARTESIAN WELL.

THE monthly summary of the proceedings of the Royal Horticultural Society gives some particulars relative to the sinking of the artesian well in the Gardens by Messrs. Easton, Amos, and Sons, who were so confident of success that they undertook the work on the principle of "no water no pay," guaranteeing a supply of seventy-five gallons per minute. The well is now bored, and the confidence of the engineers has been justified by the result. Not only has the well been sunk at the estimated cost, and water been found at the expected depth, but it has been found of the purest and softest quality, and in such abundance that, instead of supplying merely from 100,000 to 110,000 gallons in the twenty-four hours (the quantity stipulated for), it can readily supply a million gallons in that time, if larger pumps and more powerful engines were employed. The total depth sunk and bored is 401 feet—a well having been sunk to the depth of 226 feet, and a bore thereafter carried down 175 feet further. The London clay was found to be of unusual depth, the thickness of the stratum passed through being 198 feet. The two wells (that at Trafalgar-square and that of the Society) correspond in one point, which is of excessively rare occurrence, wholly beyond provision, and a pure matter of chance: out of numerous wells bored by Messrs. Easton, Amos, and Sons, for instance, these two are the only instances in which it has occurred. Whilst boring through the chalk, in both cases, the instrument came upon a fissure, and dropped down a space of several feet. To understand the significance of this, it is necessary to remember that the way in which the water in the chalk finds its way to the surface, or into the ocean, is through such fissures. An example of its finding its way to the surface from them may be seen in the River Wandle, which takes its rise at Carshalton, near Croydon, pouring out of its source through such fissures a river ready made. An instance of its falling into the sea out of such fissures may be seen at low water near Brighton, where a succession of vertical fissures, from the narrowest chink to 6 inches wide, occurring at varying distances from each other, pours out an immense quantity of fresh water. Such fissures act as the main channels by which the water in the chalk finds its way into the sea. When a well sunk into the chalk does not fall upon one of these, it is dependent for water on what may percolate through the surrounding chalk into the well; but, if it hits upon a fissure, it draws its supply from a stream itself, and it will, of course, depend upon its size how far it may be exhaustible. The quantity of water percolating through the chalk, however, is so great that, for all ordinary purposes, any well sunk for some depth in it is sufficient. If a very large supply is not wanted, the only drawback on such a well is that it may be lowered by unusual or continuous pumping, so as to require some time to be given to allow it to refill, and that in course of time the standing point of the water gradually sinks. A well which has dropped upon a fissure, on the other hand, may apparently be pumped for ever without lowering its standing point. It draws its supplies from a running stream, as it were, and as fast as it is pumped out it flows in. This remark, however, only applies to the standing-point when it has once been found; for, after the well is opened and first tried, there is always a falling, from the effects of pumping, until the proper level is reached. In the Trafalgar-square well the standing level (which was found after the first 48 hours' pumping, during which the surface of the water was lowered 4 feet) has been constantly maintained since 1844, and, as the same amount of pumping at South Kensington has lowered the surface of the water only 16 inches, it is reckoned that the supply of the Society's well will be much larger than at Trafalgar-square. The standing level of the Society's well is higher than at Trafalgar-square—a circumstance which may, perhaps, be accounted for by the greater number of other artesian wells sunk to the eastward of the latter, and possibly, also, by its being nearer to the outlet of the water.

A woodcut, which accompanies the summary, shows a section of the Society's well, and of that which supplies the Trafalgar-square waterworks.

THE EXHIBITION BUILDING.—On Saturday week the eastern dome, as far as its main features of construction are concerned, was completed. At three o'clock the centreings of the twelve ribs were knocked away, and the immense mass of metal stood for the first time supported alone by the columns and girders. At the time of striking away the wedges there were present Mr. Thomas Fairbairn; Mr. Baker, engineer to the London and North Western Railway; Mr. Peter Rolt, of the Thames Iron Works; Captain Ford, Mr. Meeson, and several other gentlemen interested in the progress of the works. There still remains the glazing and some of the minor portions of the work to be completed, but the "big dome" is practically finished.

ANCIENT AND MODERN SUPPLIES OF WATER IN ROME.*

AMONG the marvels of ancient Rome, and the most wonderful, are the aqueducts. When we consider their great number and immense cost, in order to conduct water 30, 40, and 60 miles into the city, we are struck with surprise. Pliny tells us of the inconceivable quantity of water thus brought to Rome for public uses, for fountains, baths, fishponds, private houses, gardens, and country seats; of costly aqueducts and conduits, mountains cut through, rocky hills bored, and deep valleys filled up;—in short, they were at that period, the most wonderful works of art and engineering skill in the world.

For 440 years the Romans made use of no water but that of the Tiber, and of wells and fountains of the town and neighbourhood; for the latter they evinced great veneration, because the waters were supposed to restore the sick to health. About the year 441 of Rome, the necessity was felt of conveying water in a supply abundant not only for domestic but for public uses, for there had existed, since the reign of Tarquin the Elder, 138 to 176 sewers, one of which, the Cloaca-Maxima, received all the impurities of the town, and had to be flushed with large quantities of water to sweep the refuse into the Tiber.

Sextus Julius Frontinus, superintendent of the water supplies and aqueducts of Rome under the Emperors Nerva and Trajan, has left us a description of these works. His writings were translated by Rondelet in 1820. Two or three years ago M. Rozat, Ingénieur des Ponts et Chaussées, published a work reducing the modern formulæ into practical results for the flow of water through such channels as the ancient city possessed, and they have corresponded singularly with the supply of water ordered to be provided for the city by the several governments under which the works were carried on.

The modern waterworks have been investigated by M. Oudry, Ingénieur des Ponts et Chaussées, employed on the railways at Rome, and the Inspector-General Mary furnishes his own notes of the measure, volume and distribution; from notes made on the same spot by the permission of M. Bianchini, Engineer of the Municipal Service of Rome.

In the year 442 the Appian viaduct was constructed, by which the first supply of water was conveyed to Rome. It is spring-water. The length is 1,190 Roman paces, of which 1,130 were underground and 60 on substructions and arches.†

In the year 484 a supply by the aqueduct of Anio the Ancient was laid on from the river Anio. Its length was 43,000 paces, of which 42,779 were underground.

127 years afterwards, in the year 608, the Appian and Ancient Anio aqueducts having become dilapidated, and the water being fraudulently drawn off here and there by private individuals for their own use, the Government put them into a state of proper repair, and added a third aqueduct, then rendered necessary by the increase of the city; this was the Marcian aqueduct.

According to Frontinus the sum of 8,400,000 sesterces (£90,720) was granted to one Marcus, a money-lender, to conduct water from springs existing on the right bank of the Anio. The total length of the aqueduct was 61710·5 paces; the subterranean portion is 54247·5 paces, above ground 7436 paces.

In the year 627 the Tepulian spring was conducted to Rome, and in 719 the Julian source was joined to it. The length of this conduit is 15,426 paces, of which 6,472 are on arches.

The aqueduct of the Virgin Water had a total length of 15,510 paces, of which 1,405 were in subterranean canals, 12,865 in conduit under ground, and 700 on arches.

About the same period the waters of the lake Aletinus were conveyed to Rome; of inferior quality, they were destined chiefly for the *naumachia*, or theatre of naval engagements of Augustus, and for the irrigation of the gardens, &c. They were 22,172 paces in length, 358 being on arches.

In order to supply the deficiency of the Appian and Marcian aqueducts in time of drought, Augustus caused to be diverted into the Appian aqueduct a stream (name not mentioned), conducted underground for a length of 6,380 paces, and into the Marcian supply (by a subterranean canal of 8,006 paces) the waters of a source which took the name of Augusta, on the right bank of the Anio, at the height of the Marcian.

Under the reign of Augustus, Agrippa caused all the ancient aqueducts to be repaired, added more than 330,000 feet of new ones, and constructed 130 reservoirs, 500 fountains for public use, and 700 drinking troughs; he adorned these works with 500 statues and 400 marble columns. Agrippa, we are told, opened the sluices which hemmed up, in seven great reservoirs, the waters brought to Rome by as many aqueducts, and flushed the sewers of the city with these seven rivers, which carried off immediately all the accumulated filth. He afterwards took a boat and navigated the cleansed sewers as far as their outlet into the Tiber. The sewers were 17·08 English feet wide and 13·78 feet high.

After these aqueducts no others were constructed till the time of Cæsar Calpurnia. At this epoch the seven existing supplies appearing insufficient for public use and private luxuries, Cæsar commenced two others, which Claudius his successor completed with great magnificence. The first of these supplies conducts to Rome the waters of the Claudian source, situated, as the Marcian and Augustan, on the right bank of the Anio.

* Contributed.

† The Roman pace was 4·870 feet, and the Roman foot 11·6935 inches.

‡ Frontinus calls all parts underground, *subterranean*, those supported on solid walls, *substructions*.

§ Frontinus generally keeps silence in his writings as to expenditure. Rondelet values the sesterce of 686—907 at 0·27 of a franc—about one centime more than a Spanish real do vellen of our day.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry must be supported by proper documentation and that the records should be kept up-to-date at all times.

2. The second part of the document outlines the procedures for conducting regular audits. It states that audits should be performed at least once a year and that the results should be reported to the appropriate authorities. It also mentions that any discrepancies found during an audit should be investigated immediately.

3. The third part of the document describes the various methods used to collect and analyze data. It includes information about the different types of data that are collected, such as financial data, operational data, and customer data. It also discusses the various techniques used to analyze this data, such as statistical analysis and data mining.

4. The fourth part of the document discusses the importance of data security. It states that all data must be protected from unauthorized access and that appropriate security measures should be in place to ensure the confidentiality and integrity of the information. It also mentions that any breaches of security should be reported immediately.

5. The fifth part of the document discusses the importance of data backup and recovery. It states that all data should be backed up regularly and that a plan should be in place to recover the data in the event of a disaster. It also mentions that the backup process should be tested regularly to ensure that it works properly.

6. The sixth part of the document discusses the importance of data retention. It states that data should be retained for a specific period of time and that it should be disposed of properly after that period. It also mentions that the retention period should be determined based on the type of data and the applicable laws and regulations.

7. The seventh part of the document discusses the importance of data privacy. It states that all data must be handled in a way that respects the privacy of the individuals whose information it contains. It also mentions that appropriate measures should be in place to ensure that the data is not shared with unauthorized parties.

8. The eighth part of the document discusses the importance of data quality. It states that all data must be accurate and reliable and that appropriate measures should be in place to ensure that the data is of high quality. It also mentions that the data should be reviewed regularly to ensure that it is up-to-date and accurate.

9. The ninth part of the document discusses the importance of data governance. It states that there should be a clear policy and process for managing the data and that all employees should be trained on the proper use of the data. It also mentions that the data governance process should be reviewed regularly to ensure that it is effective.

10. The tenth part of the document discusses the importance of data innovation. It states that the data should be used to drive innovation and that new technologies should be explored to improve the way the data is collected, analyzed, and used. It also mentions that the data should be shared with other departments and organizations to promote collaboration and innovation.

Its length was 46,406 paces, of which 36,230 were subterranean, 609 in substruction, and 9,567 in arches.

The second aqueduct conducted the water derived from the river Anio higher up the stream. It is naturally turbid and muddy in rainy seasons, so that purifying filters were disposed along its course. The length of the new Anio aqueduct was 58,700 paces—viz., 49,300 subterranean, and 8,791 on arches. The arches of this supply are the most elevated, attaining a height of 108 feet. The Claudian aqueduct, in the environs of Rome, is borne upon the same arches as the new Anio.

The Neronian and Marcan constructions in the interior of Rome, with the exception of the aqueducts of the Virgin and Alsietina waters, arrived at Rome near the Porta Major; from this point, arches, described by Frontinus as considerable, carried the new Anio and Marcan supplies on to the Celius and Aventinus mounts.

Such were the chief of the Roman aqueducts as they existed at the end of the first century of our era. In the following summary the total lengths are given in English feet.

	English Feet.
Appian and Augustan	85,568
Ancient Anio	209,610
Marcan	300,528
Topulian and Julian	75,125
Virgin	75,534
Alsietina	107,978
Augusta (branch)	3,896
Claudia	225,097
New Anio	285,869

Total..... 1,364,904

Of these totals we have—

	English Feet.
Underground	1,194,984
In substruction	14,780
On arches	166,140

Total..... 1,369,904

As to the system of construction, the Roman aqueducts were canals lined with masonry, some buried underground, others supported on solid masonry, or on arches to maintain a uniform inclination. The first aqueducts built were of a rectangular section, the later were constructed with semicircular arches. We have no data as to the section and mode of construction of the portions underground; as to the aqueducts on arches, we have some dimensions and sketches. The arches of the latter vary in span from 17 feet 7 inches to 26 feet 9 inches.

In a fragment of the Claudian arches, of 75 feet 6 inches in height, the span was 19 feet 6 inches; the thickness of the piers, 14 feet 6 inches; width of piers at right angles to axis of aqueduct, 10 feet 9 inches; thickness of arch at keystone, 2 feet 7½ inches; the invert was on a level with the extrados of the arch and the rectangular section of the aqueduct, 5 feet 10 inches by 4 feet 3½ inches high; the side walls and covering of the aqueduct, 3 feet 3 inches thick. The masonry of the arches were of stonework; the side walls of the watercourse seemed to have been of concrete.

The Neronian arcade for the new Anio was in spans of 26 feet 3 inches; width of piers, 7 feet 7 inches; height of ditto up to springing, 52 feet 6 inches; the transverse section of watercourse, with semicircular arch, 2 feet 7 inches span, 7 feet 4½ inches from invert to soffit of arch; it was constructed of brick.

The aqueducts in general had three stringcourses of dressed stone, one at the springing of the arch, and the others at the invert and summit of the culvert. The covering was either flat or sloped on each side if the section was rectangular, or curved if it was semicircular.*

ARCHÆOLOGICAL INSTITUTE.

At a meeting of the Archæological Institute, held February 7th. Professor DONALDSON in the chair, Professor WESTWOOD, of Oxford, gave an account of a visit made by him to Trèves last year, and exhorted his hearers to go there in search of objects of ancient art. He described the museum as full of curious and most interesting objects, but with no order or arrangement whatever; he mentioned the Evangelary MS., a gift of the Sister of Charlemagne, also a Book of the Gospels, written by the monks of Riehenan for Archbishop Egbert. He exhibited a casting from a fine ivory—St. Helena entering some city in procession—the work of the time of Charlemagne. In the western crypt of the cathedral they have lately found a well; it may have been used in the earliest times for baptizing.

Professor DONALDSON, agreeing with Professor Westwood as to the interest of Trèves to the archæologist and student of art, pointed out the importance of forming a collection of ivories as illustrative of art, and mentioned the valuable works on this subject by Mr. Digby Wyatt and Mr. Edmond Oldfield.

Capt. WINDUS, R.I.N., then read an account of a great carrack, or man-of-war, built by the Knights of St. John, at Nice, in 1530. It was one of the fleet sent by the Emperor Charles V., in 1535, against Tunis. She was named the *Santa Anna*, and attracted much attention from her size, armament and fittings; she had six decks, and her crew was 300 men. The "carrack" figures in the frescoes of the Palæes of the Knights Hospitallers at Rome.

Mr. W. BURGESS read a notice of a tomb erected in honour of an officer lent to the Florentines, by Amerigo de Narbonne. He is represented on horseback. The armour, of which Mr. Burgess had sketches, differs from the armour of the same period in England, when plates of leather or metal were worn with mail armour; this change commenced probably in Italy.

Mr. R. G. P. MINTY exhibited photographs of the church at Harting, Sussex, and of two tombs and effigies of Sir Edward Caryll, of Ladyholt-park, in that parish, and his son Sir Richard. The chancel or monumental chapel has been lately removed; the family is extinct.

Mr. E. GONWIN sent a notice, with drawings, of the Tower of St. Philip's

* To be continued.

Church, Bristol; it was of the thirteenth century, and was suffering from neglect and age; he suggested that the Institute might do good by calling attention to the subject.

A curious image of lead was exhibited by T. A. ROBERTS, Esq., M.P., through the Tithe Hon. Sir EDMOND BEAN. It was found in Cornwall, near one of the ancient smelting-houses, called in the county "Jews' Houses."

A bronze sword, found in the River Lea, of remarkable length, was exhibited by Mr. A. W. FRANKS. Another, of remarkable form, Lincolnshire, and some Persian arms, were exhibited by Mr. W. I. BERNHARD SMITH; some stone celts, from Ireland, sent by the Rev. G. Mellor, of Warrington; and some curious mining axes, sent by Sir R. Murchison, from the Museum of Economic Geology.

HISTORY OF THE DISCOVERIES AT HALICARNASSUS.

THE magnificent but too costly work by C. T. Newton, Esq., M.A., late H.M. Consul at Halicarnassus, a "History of the Discoveries at Halicarnassus, Cnidus, and Branchidæ," is severely criticised by Mr. Fergusson, who, writing to the *Athenæum*, says:—

As an architect, I dissent from the restoration of the Mausoleum therein contained, because it makes one of the most hideous buildings ever dreamt of out of what all antiquity agreed was one of the most beautiful. Under any circumstances, a great cubic mass of plain masonry 119 feet by 88 feet in plan, and 65 feet high, unrelieved by either sculpture or architectural ornament, is as ugly a feature as ever issued from the hand of man; and when used as a base for a delicate and highly-ornamented Ionic order, it also becomes one of the most inappropriate. Above this, in Mr. Newton's restoration, there is nothing but a low flat pyramid—truncated to receive the quadriga, but so arranged that it can nowhere be seen itself, but manages at the same time to prevent the sculpture it supported from being visible within any moderate range of vision. If the Greeks did all this, they were a wonderfully stupid and inartistic people.

As an archæologist, I dissent from Mr. Newton's views, not only because they are in direct contradiction to Pliny's text, on which all restorations of this monument must be based, but also because they do not agree with his own discoveries. Pliny says the pyramid terminated in 'Metæ cacumen'; Mr. Newton denies this. He says these words mean nothing. Pliny says the pyramid and the quadriga equalled the height of the basement; Mr. Newton says they did not, and alters 'altitudine' into 'altitudinem' in the text, in order to escape the difficulty. Pliny says the cella was 'brevius à frontibus'; Mr. Newton makes it—practically—square. His own discovery of the Cymatium moulding with the lions' heads proves incontestably that the intercolumniation was 10 feet 6 inches; Mr. Newton makes it 10 feet. He quotes as a fact Guichard's description of the opening of the tomb, and then, by the restoration, shows that the tale must have been absolutely false, and so on throughout the whole. It would be tedious to point out all the discrepancies that necessarily follow from the above. The real question that interests the public is, is all this necessary? Cannot the Mausoleum be restored in accordance with Pliny and the recently-discovered facts? The answer, it appears to me, is, that there is nothing so easy or more certain.

In this very book Mr. Newton gives a plan, section and elevation of the Lion Tomb at Cnidus. Like the Mausoleum, it consists of a square basement, a pteron of columns, a pyramid of steps, and, lastly, a 'Metæ cacumen,' in the shape of a pedestal supporting the piece of sculpture which was the crown of the whole. It is inconceivable that any one can look on this and not see that it contains the solution of the whole difficulty. On the pyramid at Halicarnassus there must have been a pedestal, according to my restoration, 20 feet by 16 feet in plan, and 12 or 13 feet in height, on which stood the quadriga.* If any one will draw it out, he will see at once how indispensable it is to architectural effect; but, further than this, it makes all Pliny's dimensions clear. Thus:—

The pedestal was	Ft. In.
The steps of the pyramid were, as Pliny says	13 6
The quadriga	24 6
	13 3 Ft. In.
The pteron or order, both according to Pliny and the remains	51 3
The basement, the same as the upper part	37 6
	51 3
Making up Pliny's total of	140 0

So far, therefore, all is clear and certain.

With regard to horizontal dimensions, if we assume the intercolumniation, as shown by the remains, 10 feet 6 inches, we find that the angle columns were coupled: both the artistic and constructive exigencies of the building require this, and the remains show it. With this and the introduction of the pedestal as above pointed out, any one may now restore the Seventh Wonder of the world, so as not only to be a beautiful building artistically, and in accordance with all we are told of it by the writers of antiquity, but quite unlike the building as restored in this book.

I cannot conclude this letter without entering my protest against the mode in which it has been published. A five-guinea book might have contained all the information this one does and a great deal more. But in that case only 250 guineas would have been received from the Trustees of the British Museum; by slightly increasing the bulk and more than doubling the price, raising it to twelve guineas, 600 guineas were obtained. The public are thus either mulcted of seven guineas or debarred from the information the book is supposed to contain.

In the present instance this is not of much consequence, as the originals of all that is valuable are to be seen in the Museum, except the por-

* I believe the lowest step of the pyramid was 2 feet 6 inches in height.

trait of the author, figured as "A Colossal Lion," plate LXI.—while for a couple of shillings, any one may purchase the blue-book containing all the information of the text. Still, I hold it to be a principle that when a public body subscribes public money, it ought to be to cheapen, and not to enhance, the price of information afforded to the public, nor to assist one of their own servants in what promises to be a successful speculation.

But it is, in this case, worse than this. The fifty copies which the Trustees have taken will be distributed to all the great Museums and Libraries of the Continent, as the one great work of its class which the Government of this country have thought worthy of its patronage, as a model of our taste in Art and of the depth of our learning! One shudders to think how they will exult—how they will laugh at us poor benighted insulaires, when they contemplate this wonderful performance brought out under the patronage of the Trustees of the British Museum.

What must foreigners think of the position of Art in England in 1862?"

"JAMES FERGUSON."

THE PUBLIC SEWERAGE WORKS, WEST HAM.

THE sewerage works for the district of West Ham are now completed, under the direction of Mr. Robert Rawlinson, C.E. The first main sewer contract having been let in April, 1858. The parish of West Ham consists of the sub-districts of Stratford, West Ham, and Plaistow, and comprises an area of about 4,735 statute acres, according to the parish survey of 1821. The lowest surface area is near Hallsville, and is about 4 feet above ordnance datum. The highest surface area is near Forest-gate, and is about 45 feet above ordnance datum. The difference of level within the parish is, therefore, about 41 feet. A considerable portion of the parish is marsh, protected by artificial embankments, from tidal waters and land floods, which rise to a height of from 6 to 10 feet above the surface of the land. The distance from the outlet works to the end of the sewer, near Forest-gate, is about three and a half miles; at Bow-bridge, two and a half miles; in Romford-road, two and three quarter miles; in Barking-road, one mile and three quarters; and in Lilliput-road, Victoria Docks, one mile and a half.

The outlet works consist of a pumping establishment and a low-water or relieving flood-water sewer. The pumping establishment is erected on land purchased by the local board at Canning Town, and consists of an engine-house, boiler-house, coal-store, workshop, and engine chimney, with pumping wells, outlet wells, and outlet pipes.

Two condensing engines (of 40-horse power each) have been provided. Each engine works two pumps, of 48 inches diameter, and 3 feet stroke. The two engines are capable of lifting about 30,000,000* gallons in twenty-four hours. The pumps are so arranged as only to lift to the level of the water in the river. The lowest lift is 8 feet, the highest lift is 22 feet. The inlet and outlet pipes, to and from each set of pumps, are 30 inches diameter. Self-closing flap-valves are fixed on the outlet pipes at the river walls.

A low-water or relieving flood-water outlet has been formed at Bow Creek, near Barking Road Station. The river Lea at this point is nearly four feet lower, at low water of spring tides, than the bed of the river opposite the pumping works. This outlet, which is self-acting, discharges the flood-water for several hours each day without pumping. In the outlet well adjoining the river, two self-closing flap-valves, similar to those at the pumping outlet, have been fixed, and, as a precautionary measure, one screw-down sluice has been placed in the manhole in Barking-road.

The larger main sewers are formed of brickwork; smaller sewers are of stoneware pipes. Cast-iron pipes have been used for crossing navigable rivers, and also for crossing marsh drains, and for the main outlets.

Brick sewers are egg shaped on section, and vary in size from 5 feet 3 inches by 3 feet 6 inches, to 2 feet by 1 foot 4 inches. The whole of the brickwork is set in the best blue lias hydraulic mortar. Stoneware pipes are circular on section, and have half-socket joints. Cast-iron pipes are circular on section, and are formed with flange or socket joints. 24,227 lineal yards of brick sewers, 27,098 yards of stoneware pipe sewers, and 210 yards of cast-iron pipes, making a total of 52,135 lineal yards, or 29 miles 1,095 yards have been constructed and laid within the district.

The sewers throughout the district have been designed with a view of obtaining the best practicable gradients, more especially for tributaries. In some cases, however, it has been necessary to lay the mains with a fall of not more than 1 in 3,520, or 18 inches per mile.

On plan, they have been laid in straight lines; and on section with regular gradients. At each change in direction, for alteration of gradient, a man-hole or lamp-hole has been constructed. The main outlet sewers in Canning Town have been laid level, and the inverts are formed of cast iron, to allow of their being laid and formed under water.

Considerable difficulties were experienced in the construction of the sewers in some portions of the district, arising from loose, wet, spongy, and other unfavourable descriptions of subsoil, and from other causes. Upwards of three miles of main sewers have been laid with cast-iron inverts, at or near the level of low water of spring tides, at the Barking-road outlet.

The main sewer crossings, under three branches of the river Lea, consist of cast-iron pipes of 2 feet 6 inches, and 2 feet diameter. At each end of these cast-iron pipes under the rivers a manhole is constructed, with screw-down sluices, which may be put down in case of injury to the pipes under the rivers and thus prevent flooding in the low districts. The river crossings were executed by Mr. Munday. By staging over the rivers, joining the pipes, dredging the lines of mains, and lowering each entire length of pipe to its position, stoppage of river traffic was rendered unnecessary, and claims for compensation, which might otherwise have arisen, were, by these arrangements, prevented. Main and branch sewers have been constructed under the North Woolwich, the Barking and Tilbury, and Eastern Counties Railways, in eight separate places.

Flushing arrangements are of three classes—first, by the admission of water into the sewers through sluices, hose pipes, or valves; second, by screwing down fixed sluices built in certain manholes, allowing the sewage water to accumulate,

and suddenly raising the sluice; and, third, by inserting loose paddles in the grooves provided in nearly all the manholes. By one or other of these arrangements the whole of the sewers within the district may be flushed.

About 310 feet in length of river wall has been put in, bounding the land belonging to the Local Board. This wall is constructed of brick and concrete, coped with stone.

The district presented several difficulties to the execution of a system of sewers which should be cheap in proportion to the number of inhabitants accommodated, and the value of property to be rated. The low flat site, the water-logged subsoil, the treacherous ground in places (silt, peat, and quicksand), the extended area, the population grouped on sites entirely separate and wide apart, the narrow streets, and great depths of the sewers in some parts, as along West Ham-lane, along Romford-road, and in other places; the great traffic on the turnpike trust roads, crossing marsh ditches, crossing beneath railways running trains at certain times of the day every quarter of an hour, and crossing the river Lea and its navigable branches, offered obstacles only to be overcome by money expenditure. An increase in the price of bricks to the extent of 25 and 30 per cent., and an advance in wages, caused loss to the early contractors, and added, in the later contracts, to the original estimate.

The total cost of the works has been £92,022.

APPLICATION OF CHARCOAL TO SEWER VENTILATORS.

THE Engineer and Medical Officer of Health have reported to the Commissioners of Sewers of the city of London as to the result of experiments in the application of charcoal to the ventilation of sewers, with the view of testing its effects, the experiments were suggested by the facts detailed in the report of the Medical Officer on the ventilation of sewers, and on sewer gases, in 1858, wherein he described the powerful oxydising effect of charcoal as determined by the investigations of Lowitz, Saussure, Thénard, and others, at the beginning of the present century, as well as by the recent inquiries and practical results obtained by Dr. Stenhouse. All of these tend to prove that charcoal has the power of absorbing and oxydising the miasms of organic decomposition, when, with atmospheric air, they are passed over it. In commenting on these facts, it was remarked that in common wood charcoal there was evidently a powerful means of destroying the foul gases of sewers; and that the practical application of it was fortunately a question of but little embarrassment; for, to use the words of the report, "let the sewers be ventilated as they may, either by open gratings in the streets, or by the rain water pipes in the houses, or by the pillars of the gas lamps, or by tubes carried up at the landlord's expense from the drains of every house, or by especial shafts in the public streets—in fact, let the gases go out of the sewers how they will, and where they will, you have but to place a small box containing a few pennyworths of charcoal in the course of the draft, and the purification of the air will be complete. As far as we know, the strength and the endurance of this power is almost unlimited, so that when once the air filter has been set up, it will last continuously for years. Its action also upon the draft cannot be particularly injurious; and I have no doubt that the temperature of the sewers, and the agencies which are now at work in circulating the air, and ventilating them, will be sufficient to keep up a current of foul air through the filters; and if these were multiplied to a large extent, the friction of the gases upon the charcoal would be reduced to an insignificant amount."

Acting on this recommendation, and a report from the engineer on the practical capabilities of the suggestion, the court decided that experiments should be made. The district experimented upon is in the eastern portion of the City of London. It includes a space bounded by Bishopsgate-street on the west, from Cornhill to Wigmore-street; by Middlesex-street and Somerset-street on the east, to the City boundary; and by the Minorities and then by Leadenhall-street to Cornhill on the south; the whole of the main thoroughfares above named being included in the area. It comprises a space of about fifty-nine acres, with about 1,700 houses and about 14,000 inhabitants. The total length of sewers is 25,587 feet, of which 2,081 feet are pipes; the remainder are constructed of brick, varying from 3 feet high by 2 feet wide, to 5 feet high by 3 feet wide, internal dimensions. There were two varieties of mechanical arrangements adopted for applying the charcoal; one consisted of one large sieve with compartments, the other of a series of trays for holding the charcoal, and were so constructed as to be capable of being readily removed from the frames into which they fitted.

In conducting the experiments attention was directed to the following points:—1st. The deodorising power of the charcoal. 2nd. The length of time that the same charge of charcoal will continue to deodorise the sewer gases. 3rd. The effect the air filters have on the ventilation and temperature of the sewers. 4th. The exact cost of the experiment, so as to obtain data from which to estimate the probable expense of the process if it were applied to the whole city, or even to the metropolis.

The deodorising power of the charcoal has been satisfactorily proved to be complete. Not only have there been no complaints from the public of stenches from the ventilating gratings, but it has been ascertained by actual observation that the odour of the sewer gases is not perceptible when they have traversed the charcoal.

As to the period for which the charcoal will detain its deodorising powers, there is not yet sufficient proof. It appears to lose much of its power when saturated with water, and as the trays were not in the experiment entirely protected from rain, it was found necessary to recharge them about once in three months. It is thought that if the charcoal could be kept dry it would not require renewal oftener than once in a year.

With respect to the cost of the process:—The expenditure incurred in fitting up 104 ventilating shafts was £918 18s. 5d., which is at the rate of about £8 16s. 8d. per ventilator. An experiment is necessarily more costly than an established system, and it is considered that a much less sum than this may be taken as a fair average of the probable expense of extending the process to the whole of the City.

The total expense of reparation and renewal of damaged trays, frames, and coverings, averaged 16s. 6d. per ventilator per annum. The cost of supervision, supplying, and changing the charcoal, was 8s. 9d. per ventilator, making together £1 5s. 3d. per ventilator per annum. The very large cost for reparation was mainly attributable to the repeated breakages of one class of apparatus used, which is not found to be capable of standing the severe traffic of the City thoroughfares.

* 30,000,000 gallons, equal to 300,000,000 lbs., or 133,928 tons.

The general conclusions arrived at from these experiments, and from the consideration of collateral evidence are—that dry charcoal in the presence of atmospheric air is a powerful means of destroying the mephitic gases and vapours of sewers and house drains; that the charcoal filters may be used with efficacy in the course of the air channels from the drains and closets of houses, as well as in the ventilation of the public sewers; that in applying the charcoal those contrivances should be used which offer the least resistance to the free passage of the air; that the situation of the filters is best when the charcoal is protected from wet and from dirt, and is easily accessible; that from the ascertained efficacy of charcoal in destroying the dangerous emanations from sewers, the system may be generally applied with great advantage; and that from the experience derived from this extensive practical inquiry, the expense of the system might be considerably reduced below that indicated by the cost of the experiment.

METROPOLITAN BOARD OF WORKS.

THE usual weekly meeting of this body was held on Friday, at the Offices, Spring-gardens; JOHN TWAINES, Esq., the Chairman, presiding.

The Proposed Road Across Hyde-park.—The Board received a report from the Committee on the Covent-garden approach, &c., submitting plans and estimates for a proposed road across Hyde-park, and recommending—

That Mr. Cowper, First Commissioner of Works, be informed that the proposed road through the park would, in the opinion of the Board, be a great public convenience during the Exhibition, and to the localities in its vicinity.

That the Board, however, with every desire to meet the views of the First Commissioner and the public, as to this road, regret they have no funds at their disposal to effect this great public improvement; they will, however, be quite prepared to make the same if Parliament will place at their disposal funds other than those derived from direct taxation for metropolitan improvements, &c.

Mr. LEGG moved the adoption of the report.

Mr. HUGHES seconded the motion.

It appeared that it was proposed, amongst other plans submitted, to form a road (which would be unattended by any difficulty in reference to Crown rights) from Lancaster-gate along the new walk across Kensington-gardens, at an estimated cost of £32,000.

Mr. BAZALGETTE, the Engineer-in-Chief, stated that this proposed road would be 70 feet wide, the average depth 10 feet, but under Rotten-row it would be increased to a depth of 18 feet, and thence it would rise to the level of the Kensington-road by an incline of 1 in 20.

Mr. BENNETT moved as an amendment—

That the Board, having an objection to any road from Bayswater to Kensington-gardens that would destroy the privacy of those gardens, declines to take any steps towards the formation of the said road.

The CHAIRMAN decided that this was not an amendment upon the motion, and consequently could not be put to the Board.

Mr. LE BRETON then moved the following amendment—

“That this Board is of opinion that a road across Hyde-park, from Victoria-gate to Kensington-gore, would greatly facilitate the public traffic, and would be an important metropolitan improvement; and having considered the various plans submitted to them by the direction of the First Commissioner, approves of the plan No. 5, for forming a new road along or near the fence of Kensington-gardens, crossing the bridge over the Serpentine on a level, at the estimated cost of £27,526; and this Board is prepared to undertake the making of the road, provided the Treasury should be empowered by Act of Parliament to transfer to this Board the balance of the coal dues which the Corporation of the City of London are about to pay over to the Treasury; but if it should be considered necessary hereafter to widen the bridge across the Serpentine, such widening should be effected as a park improvement.”

This amendment was lost.

Mr. ROCHE then moved, as another amendment, the following addition to the report of the Committee:—“Or will authorise to be paid over to the Board the balance of the coal dues which the Board understood is about to be paid to the Treasury by the Corporation of the City of London.”

This amendment was eventually withdrawn.

Mr. CRELLIN moved, as another amendment, that the latter half of the last sentence in the Committee's report be omitted.

Mr. HALL seconded the amendment, which was lost.

The original motion was then put, and carried by a majority of 27 to 7.

The Embankment of the Thames.—The CHAIRMAN stated, in reply to a question from a member of the Board, that the First Commissioner of Works had promised that the Board should be in possession of the plans for the embankment of the Thames on that day week.

Utilisation of the Sewage.—The next subject set down for the consideration of the Board was a report from the Main Drainage Committee, stating that the Committee entertain very favourably the proposition for dealing with the sewage of the northern area of the Metropolis, contained in the communications from the Hon. William Napier and William Hopk, Esq., and recommending the Board to assent to the principle of a concession of the sewage for the term of 50 years, provided the requisite authority be granted by the Legislature to the Board, and subject to the introduction of all necessary clauses in the Bill for the protection of the Board and of the public interests confided to them, and for insuring the fulfilment by the Company of the obligations undertaken by them, and to hear and determine upon certain motions thereon, of which notice had been given. In consequence, however, of a notice of motion respecting the utilisation of the sewage of towns, which was given the previous night in the House of Commons, by Mr. Brady, it was moved “that the consideration of this subject be adjourned until the Committee of the House of Commons (to be appointed with the sanction of Government) on the utilisation of the Sewage of Cities and Towns has made its report.” The motion was seconded and carried by a majority of 20 to 9.

IMPROVEMENTS IN RIO JANEIRO.—A prospectus has been issued of the Rio de Janeiro City Improvements Company, with a capital of £850,000, in shares of £25 each. The Company have a concession from the Brazilian Government for draining the City of Rio de Janeiro on plans of Mr. Gatto, approved on behalf of the Brazilian Government by the late Sir W. Cubitt, Mr. Robert Stephenson, M.P., and Mr. Rendel, and which stipulates an annual payment to be made direct by the Imperial Government to the Company of £5 5s. per house. It is said that an absolute contract for the work and its subsequent maintenance has been entered into by Messrs. Brassey and Co., on terms which, after providing for 7 per cent. interest during construction, will leave a permanent net divisible profit to the shareholders of 8½ per cent.

“LUDDITES.”—A “trades' union” outrage of a violent nature was committed in Chelwood, Manchester, on Saturday night. The object which had offended the union men was a brick-making machine, of the productive powers of which a most glowing account is given. The blind opposition of the brickmakers almost warrants the quality of the machine, and for some time past the brickmakers have been threatening all engaged in the work. A coffin was actually sent to the home of one of the men belonging to the place. On Saturday an attempt was made to blow up the machine, but, fortunately, the attempt was only partially successful.—*Civil Service Gazette*.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting of this body was held on Monday evening; Professor KERR in the chair.

Mr. T. HAYTER LEWIS, Hon. Secretary, read the minutes of proceedings at the last meeting, which were approved of and confirmed.

Donations.—Amongst the donations announced were the following:—(From the Royal Society) Proceedings of the Royal Society, Vol XI., No. 47; the Royal Engineers, being remarks on their duties, with suggestions for greatly increasing their numbers, and thus rendering the efficiency of the British Army complete (pamphlet 8vo., 1862); A Practical View of the Sanitary Question, being a General Report of the Proceedings of the Local Board of Health for the Parochial District of Regent-square Church, St. Pancras; *Revue Générale de l'Architecture et des Travaux Publics*, par M. César Daly, Architecte; the Pictorial Handbook of London; Remarks on Ventilation, with Extracts from Official Reports on the Combination of the Ventilating and Warming System, Van Hecke, by B. Wilson Weatherby Phipson, C.E.; (from Mr. Cole), three photographs, part of the north aisle and transept of the Duomo, Milan, and parts of the front of the Duomo, Milan; (from Mr. Rawlinson, C.E.), A Report of the Completion of the Public Sewage Works in the District of West Ham. On the motion of the CHAIRMAN, a vote of thanks was passed to the donors.

New Members.—The following gentlemen having been balloted for, were duly elected:—Mr. Edward Swansborough, 6, Great James-street, Bedford-row; and Mr. Thomas Henry Watson, 9, Nottingham-place, W., as Associates.

Healthy Dwellings.—The meeting then proceeded to resume the adjourned discussion on the paper read four weeks ago by Mr. HENRY ROBERTS, “On the Essentials of a Healthy Dwelling and the Extension of its Benefits to the Labouring Population,” and which has been fully reported in our pages.

The CHAIRMAN said it was arranged that the adjourned discussion on Mr. Roberts's paper should be resumed by Mr. Godwin, upon whom he, therefore, called to address the meeting.

Mr. G. GODWIN said the gentlemen present would recollect that Mr. Roberts's paper was divided into two parts, the first portion bringing together what were considered the essentials for a healthy dwelling, and the second portion gave a statement of various efforts that had been made, mostly by associations, to extend the advantages of healthy dwellings to the labouring classes. If the whole of the first part of the paper of Mr. Roberts, which had since been printed, had been read when it was before the Institute, probably the members of the Institute would scarcely have thought it necessary to carry the subject further. Mr. Roberts had, with much ability and zeal, devoted many years to this subject, and by the publication of pamphlets and papers of great value, both in this and in foreign countries, on the sanitary question, he had entitled himself to the gratitude of every one having an interest in the subject, and that, he believed, ought to mean every one. The paper which Mr. Roberts had read to them a few weeks ago, as it appeared to him (Mr. Godwin), formed an additional claim on their gratitude to that gentleman. Nevertheless, he was quite willing, if the meeting thought it desirable, to open the adjourned discussion; he saw present many gentlemen interested in sanitary improvement, and he had no doubt the discussion would lead to advantageous results. They could not yet give up generalities he was afraid, though Mr. Chadwick at the last meeting gave expression to an opinion that it was time they did so. He believed with Mr. Chadwick that it was time, but the public was not sufficiently instructed or awake for the advocates of sanitary improvement to give up those general observations which were calculated to induce a strong public opinion in the right direction. There was a consequent connection between wrong structural erections and disease. They had only to look for example to the parish of St. Pancras, where in one district the average deaths were fifteen in a thousand; and in another district, twenty-three in a thousand; or take the parish of St. James, where in one district, twelve out of every thousand died, and in another district twenty-three out of a thousand died. When it was found that certain houses furnished a regular supply of fever cases, and that such supply stopped when structural improvements were made, doubtless such a cause of disease would vanish, and surely they ought to ascertain the sanitary condition of the houses not only in London but in the large cities and towns of England. And many must have seen, with him, houses in such a condition that to retain in them either health or virtue was impossible. He had given descriptions of rooms where fifteen or sixteen persons were sleeping without means for the escape of foul air or entrance of the fresh air, and where it was impossible for the body to resist or throw off the attacks of disease, and to perform its proper functions. The greatest advantages, there could be no doubt, arose from due attention being paid to sanitary arrangements, as might be seen in the case of model lodging-houses. After referring to the excessive mortality in the hospitals at Scutari, and to the lower rate of mortality in hut shelter in the field, Mr. Godwin proceeded to remark that health was very materially affected by structural arrangements. The startling effect of deaths in the army took every one by surprise, when it was found that the mortality amongst the Guards exceeded that amongst those engaged in unhealthy occupations, but that excessive mortality had been diminished by improved sanitary arrangements. He then further remarked that the probable sites of epidemics could be pointed out, and a striking illustration of this was given in a little book entitled “London Shadows,” which afforded an undeniable instance of the existence of nuisances which led to disease, and which nuisances might be got rid of, and thus a diminished rate of mortality secured. That was lately shown very forcibly by newspaper accounts on the occasion of the national loss incurred by the death of the Prince Consort, and it was a statement that seemed to strike deeply into the minds of a large number. It was hoped that such statements would be attended with good effect, and lead to the improvement not only of the cottage of the labourer, but the dwellings of all classes of the community. “To drain and pave means raise and save,” but some misconception and disappointment had occurred through the supposition that drainage alone was necessary. It was quite true that drainage effected a great deal, as might be found from official returns made in reference to places where an effective drainage had been carried out. But much more was requisite. Of the evils of cesspools it was quite impossible to speak too strongly; it startled one to see those cesspools creep up as they did sometimes. The condition of London at one time in this respect must have been something frightful. No less than 5,000 cesspools in the City had recently been taken away, and what remained was enough to startle one. Amongst the existing evils to be complained of, in regard to sanitary improvement, were bad foundations, thin and porous walls, defective drains and traps, want of ventilation, non-supply of pure air and the non-removal of bad, want of pure water, wasteful means of heating, smoky chimneys, want of light—a legacy of the late window tax—dark rooms and bad

ventilation, and defective paving of yards and areas. As to the excessive cost of dwellings for the poor, in respect of dampness it would be a great boon if they could in all cases obtain a layer of concrete over the whole site, and in many cases it would be desirable to have a layer of asphalt. Mr. Godwin then referred to a number of inventions for promotion of sanitary improvement, including those by Boyd, Jennings, and others. After the reading of Mr. Roberts's paper that night month some discussion took place as to the desirability of having non-absorbent bricks, and it was then shown that the difficulty which would have to be experienced in that respect would be the making of such bricks adhere to the mortar. There was, however, another difficulty, and that was the coldness inside the house caused by the use of a non-absorbent material there. Thus, they should endeavour to get a brick which would be non-absorbent outside and absorbent inside. In the South Kensington Museum there was a very considerable collection of building materials, the study of which would be found of great advantage to those who were looking at hollow bricks and other matters, and be found valuable examples to those interested in sanitary improvements. The injurious effects of damp in cottage and other dwellings were not, he was sure, sufficiently considered or thought of. He and others knew rooms where books became mouldy and linen damp, and yet they were inhabited by people who expected to enjoy health in them. The speaker then proceeded to dilate on the injurious effects of bad foundations, bad drainage, and other evils, which might account for the low state of health of the inhabitants of thousands of houses. There were thousands of houses growing up round London with which architects had nothing whatever to do; it was the rarest thing in the world that an architect had been engaged on those houses, except to look to them on behalf of the ground-landlord. Even in many cases of the erection of houses of a better character, upon which an architect was employed, they all knew that if the architect were to attempt to introduce an improvement, and it turned out to be not so beneficial as was anticipated, the whole responsibility would rest on the architect, and if the gentleman who built the house or houses was a litigious man he would probably bring an action for damages against him, and that difficulty led many architects to go on in the old jog-trot style. He did not know whether it ought not to be the duty of the Government to insist on every house being certified by a proper authority before it was inhabited. He hoped that gradually more stringent rules would be provided, that the Building Act would be improved, and greater powers given under the Metropolitan Improvement Act, so that persons might be assured on going into houses that they were not going into disease, if not certain death. The three sanitary clauses in the Building Act, relating to cellar dwellings, rooms on the roof, and the area of 100 feet behind each house, had been failures, owing to the ease with which they were evaded. As to sleeping in cellar dwellings, the violation of the provision of the Building Act in regard to that ought to be thrown under the management and care of the inspector of nuisances or the parish surveyor, the district surveyor being simply called upon to show that such rooms, if slept in, were not proper places to have been slept in. In respect of pure water, they found in every house, or nearly so, that the present supply was most insufficient. The Thames water, though it was pretended to be filtered, was impure, the water we had was anything but satisfactory, and the influence of impure water in causing disease was quite undeniable. Some people complained of the expense by which an abundant supply of good water was attended, but the Romans did not care what sums of money they spent in bringing the best and purest water to their cities. Then, again, the supply of water should be constant. In many districts such was not the case. In his own district he had known thirty houses to be without any supply of water from Saturday afternoon to Monday morning. Such being the case, how could the people living in those houses pretend to be clean? It was out of the question, and then to be in dirt became a habit with them. As to the means of taking water to houses, we went on using lead pipes, although it was known that such means of taking the water to houses was injurious, and frequently actually poisonous. If that could be thoroughly understood, if people would dismiss all doubts on the subject, if they would see that lead pipes were bad, and that even pipes tinned were bad, if all that was but thoroughly understood, we should soon get a pipe that would answer the purpose, and that was very much wanted at the present moment. As to the traps of our drains, nothing could be worse in a general way, for they were constantly ineffective. In some houses in his district in Islington the traps were broken back and front, a poisonous smell was produced in consequence, and the result was that there were sickly children and thin emaciated mothers, as they were being poisoned. This subject was of immense importance, and a good suitable trap was of the highest consequence. There were several on the table, and he did not pretend to say that one was better than another. (The speaker then proceeded to explain the peculiarities of the traps on the table). What was wanted was a perfect trap; the traps in general use at present were simple disguises. The ventilation of the drains outside the house was of the greatest importance; the use of the rain-water pipes, which had been often recommended, he could not himself strongly recommend, as he could see cases in which they would be injurious. He thought the use of charcoal had been shown to be very satisfactory. There was one point nearly altogether neglected in our houses, yet it was one of the most vital importance, and that was the means of admitting fresh air involuntarily without a draught, and the means of taking away the foul air. Every one should insist on that being done. Half-a-dozen schemes had been proposed, amongst others those of Boyd, Jennings, Taylor, Doulton and Watts (all of which he explained to the meeting from specimens of the different schemes on the table.) All those arrangements were simple and of vital importance in bringing in fresh air and taking out the foul, without opening windows or the door. And he called upon the public to use such means, and upon architects to assist the public in the use of them. Then, as to grates, that was a very large subject—indeed, too large for him to dwell upon. The waste of fuel that was going on in respect of some grates was perfectly preposterous. They ought to understand what were the right principles of stove-making, and adopt that scheme which would be suitable in all respects. They ought to know by experience what were the grates by which they could effect a saving. The open fireplace they all desired, they did not want to get rid of that which was a focus of enjoyment; but with bad grates they got smoky chimneys. He then referred to an invention of Mr. John Billing for the prevention of smoky chimneys, which had been used in many places and found effective. A great deal could be said as to the necessity of reducing the cost of houses for labourers, and much might be done by the use of machinery in lowering the price of cottages for the working classes. If, as in the case of ship-building, windows, doors, and roofs were all made of a certain pattern and number, that could be done much cheaper by machinery,

as a matter of course, and then there might be good, healthful houses, made after the best plan, and at a cost that would allow a fair return to the owner. He did not mean that that should be applied to ordinary buildings, but to cases where healthful accommodation was required for the working classes. Then, again, concrete building seemed to him to have been overlooked; he thought concrete walls might be erected in cottages, which would prove to be much better than walls of bad bricks. The subject of agglomerated houses would require a night for themselves, and he would not then discuss it. Many a house was made as if it was to be occupied by one family, whereas it would be occupied by three or four families. Now houses ought to be arranged to that end as in Scotland, where people lived in flats, and where each family had all the accommodation and requirements which a whole house stood in need of. The effects of evil arrangements in dwellings, when they did not actually result in death, were very sad. Evil sanitary arrangements led to a low state of health, and that was the chronic condition of thousands in this country. The laws of health ought to be taught to every child, from the ragged school upwards, and such teaching would naturally lead to the lowering of the rate of mortality throughout the kingdom. It was scarcely possible to calculate the amount of misery, remorse, and crime produced by unhealthy houses, which in all cases had a most injurious and dispiriting influence on the inmates. We wanted, too, more colouring in our houses, more pictures, and more prints, which had a beneficial effect on the spirits, and the same argument would apply for the adornment of towns.

Mr. CHADWICK, having been called upon by the Chairman, said there was one point to which Mr. Godwin had alluded which he wished to offer an observation upon. The previous speaker seemed to object to the non-absorbent surface within a dwelling. Now, there were houses built with a cement that was equivalent to a non-absorbent surface, and rooms painted with oil painting were themselves non-absorbent. But there were many rooms where the whole surface was, so to speak, non-absorbent. Now, they had never heard of any evil arising from that sort of surface in the way of cold. The experience of the absorbent surface was perceptible to the nose in hospitals and other places, and the sanitary officers had felt it very much. With respect to the absorbent surface of a wall, he thought they had had a great deal of experience. In his opinion one of the most healthy houses they could construct would be of glass, on the double-window principle. To have a surface non-absorbent was no safety as to cutting off dampness from below. There were some very important experiments referred to by the Commissioners for inquiring into the warming of buildings, as to the effect of a double window; and the experiments showed that about six inches of space between the outer and the inner window was quite adequate for the non-conducting power. That gave a very important result for the hollow brick, because the hollow brick, properly constructed, would be like a double window. One ground he strongly advocated was the use of hollow brick walls, so that there might be obtained a much thinner wall. A 9-inch hollow brick wall would be warmer than an ordinary wall of greater thickness—16 or 18 inches. He thought economy as well as health would be promoted by applying the hollow brick wall to cottage structures as well as the middle-class buildings. The hollow brick could be obtained much harder burnt than the common bricks. The floors should be as much as possible non-absorbent, and the walls too. Several noblemen and gentlemen had made experiments with hollow brick walls in the construction of cottages, and the result was found to be very beneficial. A report had also been made in favour of the use of hollow bricks, on the ground of economy.

Mr. FOWLER said, that, living now in the country, he had had some opportunity of taking notice of matters that had been under consideration that evening. One particular circumstance to be observed was the great diversity of situation, of materials, and other matters affecting the erection of cottages. In various parts of the kingdom the cottages must necessarily assume a different form and a different construction, because as cheapness was so very important an element in the matter, it was found requisite to take such materials as were at hand, and it would be very desirable that gentlemen living in the various districts should have hints communicated to them, so that they might be able to make the most of the materials at their command. They spoke there chiefly of bricks, but in many instances in the country bricks were not to be had. For instance, in Devonshire, cob—which was loam mixed up with a certain portion of straw, made consistent, and carried up in layers of considerable thickness—was very extensively used in the erection of cottages. He would venture to say that, when erected, there was no cottage or house more comfortable than such a mud dwelling; from the circumstance of the great thickness of the walls, and the non-conducting qualities; such dwellings were, in summer, cooler, and, in winter, warmer, than the ordinary houses. Such houses were generally covered with thatches, and the materials together formed a very comfortable dwelling. The having of non-conduction by means of substantial buildings was very desirable in all instances, as far as could be afforded. As to situation, there was in his neighbourhood a poor woman who lay sick for years, and, on going into her cottage, a person had to go through a mass of fermenting matter kept there for the farmer, close to the cottage door. That poor woman lay in bed for years, and fell into an emaciated condition, but it never occurred to anybody what the cause was. Nothing, however, was more probable than that she was sick and dying from a cause that was removable. Representations were made to the farmer on the subject, but nothing was thought of them. Attention should be called to such matters where they occurred, for many deaths had arisen from such causes. It was not merely the structure of the house they had to consider; it was as important to see that the house was not rendered unhealthy by circumstances surrounding it as it was to pay proper attention to the construction of the house itself. There was only one other point he would venture to say a word upon, and that was in regard to chimneys and the conduction of smoke. They should never forget this, that the great thing to be looked to in reference to smoke was to keep a balance of air, and the balance of air should always send the smoke up the chimney. If the chimney was kept warm that would always be the case, but if it had a cooling influence there would be a down draught. The flue should be kept warm, and then the current would go up. He was very glad the Institute had devoted so much attention to this subject, which was one of great importance, and hoped the result would be that they would put the subject in such a manner before the public that they would be able to profit by it.

Mr. H. RAWLINSON said the subject under consideration was a very wide one. Attention should be paid to the sanitary condition of the dwellings, not only of the poor, but of the wealthy also. He had no wish to throw stones from a glass house, but he was, however, bound to say that the subject of sanitary improvement had not been considered by any person in general practice as an

architect or engineer except within the last twenty years. He then proceeded to state that he had had the honour of being called on to examine and report on the condition of Windsor Castle, in order to see if there was anything in that great structure to account for the recent great national loss in the death of the Prince Consort. In 1824 the Legislature voted £300,000 to make Windsor Castle a fit residence for George IV., and an architect was called in for the purpose. At the end of the reign of William IV. upwards of three-quarters of a million had been expended on the building. In 1844 there were found fifty-one cesspools beneath the basement of the building, ramified by drains in all directions, and there was not one window in the grander part of the palace that would open in its upper part. In 1844 plans were made, the sewers were carried out, and he was happy to inform the meeting that, after going all over the Castle, his opinion was that Windsor Castle now stood the most complete house in this country, and probably in any other, in its sanitary arrangements; and he had no hesitation in saying that that, in a large measure, was due to the great man the nation had recently lost, and who, when he became the Consort of the Queen, took up the sanitary question, worked it to the utmost for the benefit of the poorest as well as the rich, and paid the most intimate attention to the drainage from 1844 down to the time of his death; and they might be gratified on finding that, humanly speaking, there was no cause in Windsor Castle to bring about the Prince Consort's death. —[Hear, hear.] It had not, he believed, been a part of the province of the architect to make the drainage a subject of study as well as the superstructure. He scarcely knew a nobleman's house in the country that had proper sewers, those employed being, in fact, great retorts of poisonous gases. And, with regard to the houses at the west end of London, the probability was that there were five per cent. or more of those great new houses in which the drains and sewers, though both executed, had no connection. There had been no proper connection made between the two; his own house went on in that state for three years. There was one nobleman's house in the country—Bowood, the seat of the Marquis of Lansdowne—in which some portion of the drainage was 300 years old, and nine-tenths of the drains had never been connected with the sewers underneath the house.

The CHAIRMAN inquired if Mr. Rawlinson's remarks about noblemen's houses in the country having improper drains referred to structures erected within 50 years.

Mr. RAWLINSON said they did, and he might say they applied to buildings erected within twenty years. The arrangements of the sewerage of the Houses of Parliament was as bad as it could be; it was a longitudinal sewer down the centre of the building, tide-locked every twelve hours. Arrangements for proper ventilation in houses were absolutely necessary. He then amused the meeting by stating that he had paid a visit to a water-closet belonging to the rooms of the Institute, which he found to be badly ventilated. Closets, again, ought to be put against external walls, instead of internal walls, as was the custom at Edinburgh and Glasgow, and which was a bad arrangement. After advocating external ventilation, he proceeded to say that, as to ventilation and the arrangement of houses, they had been told that instinct and nature guided them; but Mr. Godwin had shown that instinct became entirely blunted by use, and people exposed to inconveniences and nuisances long lost all feeling of smell. The question of the sanitary condition of cottages in this country was one of national importance, and it was one which he sincerely hoped the Legislature would take up sooner or later. The Building Act was a dead letter, and so was the Common Lodging-house Act of Lord Shaftesbury, for it could not be brought into play except in cases where tramps slept for a night. The speaker then dwelt on the overcrowding of houses, as was the case at Plymouth, Falmouth, Portsmouth, Newcastle-upon-Tyne, and other places, where people lived in tenements, and the houses were divided and subdivided for the accommodation of different families. He next referred to the pigsty question, and observed that more human lives had been lost in this country by pig-keeping and pig-feeding than in all the battles we had fought in foreign countries. The keeping of the pigsty led to fever and other diseases, yet the poor people would consider it the greatest possible hardship to be deprived of their pig. Now, should they not be saved from danger brought on by their own ignorance and self-will? The question of cottage accommodation was one of great importance, and he hoped they would all of them put their shoulders to the wheel in order to improvement; and he trusted that the Institute would take up the great sanitary question in its full bearings—drainage, sewerage, ventilation, lighting—and also the cheapness of structures for the labouring people, in order that we may have a healthy nation and a more happy and more loyal people.

Mr. T. HAYTER LEWIS referred to the statement made by Mr. Rawlinson that in many large houses the drains were not connected with the sewers. Now, the making of such connection was not in the province of the architect, but of the authorities of the Sewers Office, who charged for making the same. Therefore the statement about the non-connection between the drains and the sewers ought to be mentioned at the Sewers Office.

Mr. RAWLINSON said he made the statement in all candour and sincerity, and he was afraid that the mischief arose from two parties being connected with the matter. In all his arrangements respecting sewers, and he had made many miles of sewers, he made an entrance for a branch connection, and no fee was charged for any connection.

Mr. ISAACS.—He must say that a better paper, or one containing a larger amount of facts on the subject under consideration, could not have been presented to the Institute. Though he was not prepared to go the length of some members as to the total efficiency of sanitary measures in preventing disease of every type, there was no doubt that sanitary measures would, to a large extent, obviate the sickness and diseases to which the population of towns had been subject. He happened to have a portion of the sewerage of the metropolis under his charge, lying between Gray's-inn-lane on the west and Victoria-street on the east, and after a review of the operations of the Local Board of Health of that district, it was found that the sanitary measures had resulted in a reduction of the rate of mortality. He would suggest that the Institute should state some leading principles as to sanitary matters. The first evil to be avoided, he thought, was that of overcrowding, than which there was no other source more conducive to sickness and mortality. When whole families resided in rooms sickness and mortality followed. Great attention should be paid to the ventilation of a number of buildings erected, particularly low buildings, in close proximity to each other, and, again, too much attention could not be paid to the condition of the drainage and the water-closets. But unless there was provision made in the way of constant inspection of such buildings, however great the care in regard to

building and to providing proper accommodation, the conveniences were generally misused.

Dr. MILROY drew attention to the subject of the ventilation of rooms and apartments. The point was a strictly structural one, and he had hoped to hear some remarks from architects as to the mode of admitting fresh air into a room, and the mode for the escape of the vitiated air. Upon the latter point they were probably all agreed; the vitiated air rose to the top—therefore the opening for its escape ought to be at the top. But then came the point, where should the fresh air be admitted? He considered that was a point on which they ought to endeavour to come to some decision: for gentlemen would be aware that there had been conflicting opinions given by Government Commissions on that subject. He might refer to the opinion and advice given by the Sanitary Commission of the Army, and they recommended a model hut embracing the important subject of the admission of the fresh air and the escape of the foul air. In that hut the general principle was the introduction of the fresh or pure air towards the floor, or a few inches above the floor. Now, recently he believed that more than one report of the very opposite character was made; and it was the very diversity of opinion that made him keep to that one point—namely, in what part of a room, hospital, or chamber, where was the right place to introduce the current of the fresh air to take the place of the foul or vitiated air? It was of the greatest importance to keep a current of fresh air in rooms and hospitals at night. During the period from sundown to sunrise it was by far the most important thing to keep the apartment or chamber sweet, for this reason, that at least two-thirds of the attacks of disease occur during the night. Hence the great importance of maintaining the purity of the air during that time.

Mr. FOWLER (having been requested by the Chairman to give some account of the mode of ventilation adopted at the Fever Hospital), said, the ventilation of the Fever Hospital, conducted by Dr. Arnott, went on this principle: they did not trust to the currents, but the air was forced into the wards, not through small pipes, but through ducts that a man could creep through. The air was driven through a kind of culvert to the different wards; it was injected at the lower part of the wards, and forced out at the top. He took it, therefore, it was an important principle, for which he gave Dr. Arnott the credit, that a very moderate amount of mechanical power enabled them to secure a change of air, by driving out the foul and admitting the fresh, to obtain the great object of ventilation. They began the Fever Hospital by covering the ground with concrete, to seal up, as it were, all the foul emanations arising from what had been a laystall for cattle. That ground was sealed up by a layer of 6 inches of concrete over the whole surface.

The Hon. ARTHUR KINNAIRD, M.P. (having been called upon by the Chairman), said he had endeavoured to give attention to this sanitary question, and his brother, Lord Kinnaird, had made experiments on the very ground which had been alluded to that evening. He did not think they could give sufficient attention to sanitary questions; the longer he lived the more he saw of that vast city in which we resided, and the more he saw of the amount of building that was going on on every side, it seemed to him a matter much to be deplored that science, with all its progress, was not more adapted to our buildings. On every side they saw buildings run up, and yet no effort was made really to remedy those defects which experience had pointed out. Now, he did think meetings such as the present were particularly adapted to draw public attention to the matter, and he thought the more they had the benefit of the press throwing light on this matter, the more was London likely to be benefited by the improvements which had been suggested that evening. He was talking on Saturday to a gentleman who had built model lodging-houses in the neighbourhood of Bethnal-green, and he said that he thought after laying out a great deal of capital in building extensive houses of the description referred to, it was a very cruel case that those who built such houses got no help from the Legislature, and he further stated that the rating on his property increased to such an extent as to become a positive check on such improvements. Now, he thought there should be some improvement and alteration in that matter. The moment they improved the class of building they were subject to an amount of taxation which was a positive interdiction or check on improvements of that nature. He threw that out as a matter worthy of consideration by those present, and he thought the law ought to be changed in that respect, because they ought to encourage instead of discouraging such improvements.

The CHAIRMAN read an extract from a communication forwarded by Mr. Phipson, in which that gentleman stated that it was a mistake to suppose that the vitiated air always ascended.

Dr. MILROY.—The great object was to ascertain from architects where was the right place to bring in the fresh air.

Mr. ROBERTS (author of the paper which led to this discussion) said if the buildings for the working classes were arranged on the open gallery system instead of the close corridor system, they would not be subject to the taxation which had been referred to by the Hon. Mr. Kinnaird. That had been decided by the judges at chambers, and that was an important fact which ought to be well considered.

Mr. WILLIAM WHITE said in reference to the building of cheap cottages in the country, he had adopted, with very great advantage, quarter bricks for 12-inch walls. In some parts of the country it was usual to build with a common earth, without water, without lime, without sand, without stone, but simply rammed in, and it formed a good substance. What he referred to was a loamy earth or gravel. He had built the walls of a house in this manner with as little cost as the carriage of the stone alone would have been. With regard to drainage, he understood that something was to be done as to waterclosets and cesspools. There was a clergyman in Dorsetshire who was advocating the mixing of heaps of rubbish and soil of every kind at the backs of the cottages; and it had been ascertained that the drying common vegetable mould, and pulverising it, would absorb from drains all the effluvia and offensive particles, and the same earth could be used for three or four months without being unduly charged with offensive matter.

Mr. EDWARD ROBERTS referred to the subject of ventilation, as to where the fresh air should be admitted and where the vitiated air should go out. The foul air did ascend, and there was no doubt all that made a room uncomfortable descended. There should be admitted a sufficient quantity of fresh air at a proper point, and he had found it convenient to admit it by a vertical tube above the heads of the persons in the room. He found the mode of ventilation he had adopted at his offices to be very effective.

This closed the discussion, and shortly afterwards the meeting separated.

ARCHITECTURAL ASSOCIATION.

An ordinary meeting of this body was held last Friday evening at the rooms in Conduit-street; A. W. BLOMFIELD, Esq., M.A., the Chairman, presiding. Mr. BLASHILL, in the absence of Mr. Arthur Smith, hon. secretary, read the minutes of proceedings at the last meeting, which were approved of and confirmed.

The Library.—In answer to Mr. BLASHILL, Mr. C. H. F. Lewis stated that the library in course of formation was to be a lending one, and that subscriptions were being received in aid of binding the books, the committee of the Association having undertaken to provide cases for the same.

The CHAIRMAN then announced that in consequence of the absence of Mr. B. A. C. Herring, who was to have read a paper that evening, it would be requisite to adjourn the meeting.

The meeting was accordingly adjourned.

DECISIONS IN THE COURTS.

POWER OF VESTRIES TO REQUIRE WATER SUPPLY TO CLOSETS.

The Vestry of St. Luke's, Middlesex, Appellants, and Lewis, Respondent.—*Court of Queen's Bench.*—This was a case stated by one of the police magistrates of the metropolis, under the 20th and 21st Victoria, cap. 43, for the opinion of this Court, upon the question whether the magistrate ought to have made an order upon the respondent for the payment of the sum of £12 10s. under these circumstances:—

It appeared the respondent was the owner of the premises in John's-place, Arthur-street, in the parish of St. Luke, Middlesex, built before the passing of the Metropolis Local Management Act (the 18th and 19th Victoria, cap. 120), and he had been summoned before one of the police magistrates at Clerkenwell, to show cause why an order should not be made, under the provisions of the Metropolis Local Management Act, requiring him to pay the vestry of the said parish the sum of £12 10s., being the expense of certain works executed by the said vestry upon the said premises in John's-place. The respondent appeared in answer to the summons on the 19th of December, 1860, and, in the result, the magistrate declined to make the order. It was proved before the magistrate that the respondent was the owner of four houses in a court, called John's-place, and that the houses had two privies attached to them. In the early part of the year 1860 complaints were made, and the vestry served upon the respondent a notice to do certain works, which he complied with, so far as to fix pans to the closets, but not in providing water supply. On the 14th of July, 1860, the surveyor of the vestry gave the respondent notice, and then proceeded to inspect his premises, and opened the drains passing under the footway pavement and connecting the privies with the sewer, which were found to be choked and blocked up. The drains were cleaned and put in order at the expense of the vestry, and on the 21st of August the vestry served upon the respondent a further notice, requiring him to provide water supply to the two privies within 28 days to the satisfaction of the vestry; and that in case of his refusal or neglect the vestry would cause the same to be constructed, and would proceed to recover the expenses in the manner provided by the Act. No attention was paid by the respondent to this notice, and the vestry, on the 26th of November, 1860, served upon him another notice of their intention, after 24 hours, to enter the respondent's premises and execute certain works, which they accordingly did on the 1st of December. They then fixed a cistern on the roof of the privies, removing the roof, and also three courses of brickwork on the upper side or pitch thereof, for the purpose of procuring a level base for the cistern; and they also fixed the necessary plumbers' work for connecting the cistern with the pipes of the water company and with the pans of the closets, and fixed new seats in the privies. The expense of these works amounted to the sum of £12 10s., the payment of which the vestry then sought to enforce by summoning the respondent before the magistrate. The magistrate, however, was of opinion that, having regard to the Metropolis Local Management Act, and particularly to the 81st, 82nd, and 85th sections, under which the vestry professed to have acted, there was no power given to convert a privy into a water-closet, by providing water supply thereto, as had been done in this instance; but that, if the privy was not sufficient, the vestry should have required the respondent to make it so, and, on his default, the vestry was empowered, by the 81st section, to make it sufficient by doing such works as were required, and then to recover the expense so incurred from the respondent. The magistrate also stated that he thought he was supported in his opinion by the decision of the Lords Justices in the case of "Tinekler v. the Wandsworth District Board of Works" (27 L. J. Ch., 342). He accordingly declined to make an order for the payment of the £12 10s.; but, at the request of the vestry, he stated the present case for the opinion of this Court upon the question whether he ought to have made an order.

Lord Chief Justice Cockburn said he was of opinion that the decision of the magistrate was erroneous. The question turned upon the construction of the 81st section, which enacted that "if at any time it appear to the vestry or district board of such parish or district that any house in any such parish or district, whether built before or after the commencement of this Act, is without a sufficient water-closet, or privy, and asphalt, furnished with proper doors and coverings, and with other apparatus and works as aforesaid, the vestry or district board shall, in case the same can be provided without disturbing any building, give notice in writing to the owner or occupier of such house, requiring him forthwith, or within such reasonable time as shall be specified in such notice, to provide a sufficient water-closet or privy, and asphalt, so furnished as aforesaid, or either of them, as the case may require," &c. The respondent admitted that the vestry had the power to order a privy to be made sufficient, but he denied that they had the power to order a privy to be converted into a water-closet. His Lordship, however, thought the vestry or district board had that discretion vested in them by the 81st section, for it enacted that if "any house" should be "without a sufficient water-closet or privy," the vestry, or district board, should have power to require the owner or occupier to provide "a sufficient water-closet or privy," &c., "or either of them, as the case may require." It was reasonable also that it should be so, for there might be cases where the privy could not be so altered as to meet the necessities of the case. It might be that the buildings were so crowded that the only remedy might be the application of water to carry the soil into the regular sewer. Upon the whole, his Lordship thought the vestry ought to have that discretion, and that the Act of Parliament vested it in them, and that the magistrate ought to have made the order.

Mr. Justice Wightman was of the same opinion, and said the case of "Tinekler v. the Wandsworth District Board of Works" was distinguishable, because in that case the board had declared their intention to do away with all privies, and had issued a general order applicable to a number of houses without any regard to whether the privies were sufficient or not. But, in the present case, the vestry had decided that water-closets were necessary.

Mr. Justice Crompton was of the same opinion, but added that in some cases a question might arise, on the words "without disturbing any building," as to what amounted to "disturbing a building," and also as to who was to decide. His Lordship, however, agreed that the vestry had the power under the Act to order the supply of water.

The judgment of the Court was, that the case be remitted to the magistrate, with the opinion of the Court.

THE EXHIBITION APPROACHES.—One of the openings towards the International Exhibition, recently insisted on as an absolute necessity by Sir Richard Mayne, has been secured by the Chelsea Vestry. The passage from Eaton-square to Sloane-square will be widened, so as to be rendered available for the increase of public traffic by that line of road.

Reviews.

Journal of the British Archaeological Association.

THE last quarterly part of this Journal contains a paper on Lilleshall Abbey, by Mr. Edward Roberts, F.S.A. Lilleshall, it will be remembered, was one of the places visited during the Shrewsbury Congress. Mr. Roberts gives a plan of the remains, so far as they can be traced, and illustrations of a late Norman doorway, from the cloisters to the church, and of the south side of the refectory.

The church itself consisted of nave and choir, together about 225 feet long by 31 feet wide. There was a north and south transept; south of the latter is the sacristy, then the treasury, and south of that the chapter-house.

We believe that Mr. Roberts is now preparing for publication an elaborate and illustrated account of the interesting remains of Wenlock Priory, in the same county.

The Ecclesiologist.

FOR February, gives the concluding part of Mr. Street's lecture on "Italian Pointed Architecture," some notes on the works at Queen's College, Cambridge, and a statement of doings at Ely Cathedral, lately noticed in our pages. Mr. W. Burges contributes, in a letter, "Supplemental Notes on Florence," as addenda to his paper on that city; there is also a notice of All Saints' Church, Hawkhurst. If, in addition to this list, we mention photographs of an internal view and plan of Mr. Joseph Clark's Point de Galle Church, at Ceylon, a bird's-eye view of St. Mary's College, Harlow, by Mr. Withers, and notices of new churches, we shall include most of the purely architectural matter contained in the present number of our contemporary.

A Letter Addressed to Both Houses of Parliament. By E. W. OLDHAM, Senior. Knight and Co., Worcester.

THE author of this pamphlet claims to have produced the first practical plan for the Thames Embankment (in 1845), and, at the same time, a plan of sewer drainage, which it is contended is now being carried out upon wrong principles. It is not easy to see how the "Royal Sacrifice," referring, it is presumed, to the death of the late Prince Consort, is connected with, or in any way attributable to, our sewerage works, but the writer finds in it "a warning voice of the unspeakable and horrible effects that must certainly follow."

There is something, however, in a point on which the author strongly insists, the necessity of constructing sewers and drains water-tight in the upper as well as lower portions. It is asked—

How many scores of miles there are of the immense network of small drains running up small streets and backs of houses, and all these made above the water-tight point of the main sewer, and, therefore, exempt by law from being made in the smallest degree water-tight? Thus all the springs are running directly or indirectly into them; and all the wells of water below that point of level—I mean for a third part of the way up the main sewer—draw all their water directly from the sewer drains. Now, if they were made water-tight, such could not take place. Where I was living in London for many months, I have seen a drain blocked up at the outlet into the main drain, yet our pumps at the upper end of the streets kept us clear of all surface water: thus, the water in the well came from the pump to the tea kettle, thence to the closet, the drain, and back again to the pump, until we drank one day the excrements or sewerage of the preceding.

The Artizan.

THE January and February numbers of this work are before us, the latter giving, in a large folding sheet, and in a tabulated form, an account of the performances of six vessels under various circumstances. "Practical Papers for Practical Men" treats of bridge platforms, "Notes and Formulae for Engineers" gives a large amount of information, and there are some interesting papers on the Strength of Materials. The proceedings of the engineering societies are fully reported.

Mr. Tite's address on "Current Topics," delivered before the Institute last year, is concluded in the part for January.

Description of Edward Finch's Proposed Improvements in the Metropolis. Wilson: Royal Exchange.

ACCORDING to these plans, which were submitted to Lord John Manners and to the Board of Works, in 1858, and placed before the Thames Embankment Commission in 1861, the author proposes two improvements—one relating to the changes and improvements in the river Thames, the other to the disposal of the whole of the sewage of the city of London and its suburbs.

On looking at a map of London and its environs, it will be seen that the river Thames at Greenwich, at about Deptford-creek, makes a bend forming nearly a right angle; that it keeps on for nearly two miles till it gets to Limehouse, there it forms another sharp bend, then it goes on in an irregularly-shaped line for about 4 four miles until it gets to a point between Waterloo and Hungerford bridges; there another right-angled bend is formed; the river then goes on for about a mile and three-quarters until it reaches Nine-elms, there it forms another bend and goes on to Chelsea. These four bends cause the portion of the river extending from Greenwich up to Vauxhall-bridge to form three sides of an irregularly-shaped long square.

It is proposed to cut off this portion of the river, commencing at about Deptford-creek and terminating at about Nine-elms, and form it into an extensive lake or dock seven miles and three-quarters long. By putting gates across the river at a point a little above Greenwich, adapted for the largest-sized ships to pass through, and at the upper or Vauxhall end of this great lake to place smaller gates, adapted for barges, river steamers, and small vessels to go through. These gates or locks would be connected by masonry to the shores of the river on each side, and would retain the water in the lake always at one uniform level or thereabouts.

It is further proposed to cut an entirely new bed for the river, commencing a little above the upper gates of the new lake at about Nine-elms, and to carry it in a line as nearly as possible straight to Greenwich, and there to let it join the present river bed immediately below the lower gates of the new lake, at a point about Deptford-creek. This new river bed will probably cross the Kennington-oval, take the direction of the Surrey canal for some distance, and then go on to the point described; the entire distance will be a little under five miles.

With regard to the second portion of the plan, which consists of the collection, treatment, and disposal of the sewage, it is proposed to make, on the north side of the river, an intercepting main drain, that shall take pretty nearly the direction the river at present takes, and that shall catch all the main drains that now

empty themselves into the river. "It would be well to have it made of iron. It should be of good size, so that there may be ample room and to spare. At the point where this drain commences or takes its rise there should be a pipe laid from it to the great lake, which pipe should rise up in the lake to the surface; it should be fixed in a secure and convenient place, and should have a valve upon it, so formed that by turning a handle any amount of water may be allowed to flow from the lake down this pipe into the main intercepting drain. At the point where this drain terminates a pumping engine would be erected, and sluice valves made to open and shut, and from there a drain would go direct to the nearest point of the river Thames below the lower, or Deptford gates of the lake, to which it could be conveniently taken."

The end aimed at by this portion of the arrangement is to admit a stream of water into the main drain; to use this as the medium for carrying along with it expeditiously, and before it has time to ferment and decompose, all the sewage matter that is brought into it, and to carry this at a speed that will prevent any deposit of the solid matter held in suspension, and thereby, to a great extent, prevent noxious gases from being formed; and, further, not to let this diluted sewage rest, but, as soon as it arrives at the termination of this main drain, to lift it up to a higher level by means of the steam-engine, and then again deal with it as will hereafter be described.

Other parts of London would be drained somewhat similarly, the sewage being conveyed to and spread over a tract of land laid with porous drain-pipes, to carry off the liquid portion, leaving solid matter remaining. What is to be done with the latter is not said.

A Sketch of the Life of John Milton, Compiled with Reference to the Proposed Restoration of the Church of St. Giles, Cripplegate. Woodley, Fore-street, Cripplegate.

THE author, who does not allow his name to appear, urges the perfect restoration of Cripplegate Church as a memorial to the memory of John Milton, who was buried therein. We understand that the highest dignitaries of the Church approve the suggestion.

Some particulars of the church are given. Dedicated to Saint Giles, born at Athens, a great patron of the poor and disensed, it was built, according to Stow, in the year 1099.* "In the reign of William the Conqueror,† houses having been built east and west across the said gate (Cripplegate), a parish church was erected rather west from the gate, and is now on the bank of the town ditch." Stow further tells us, "That the church was at first small, but enlarged at divers times as the parish increased, when it was at length rebuilt." It underwent a fiery ordeal in 1545, but was speedily restored, and wholly escaped the conflagration of London in 1666. It measures 114 feet in length, 63 feet in breadth, and, originally to the roof, 32 feet; it is built of stone and brick. The pillars and arches are Modern Gothic.

The tower, now in ruins, is considered to be part of the original structure, and it may be inferred that by far the greater number of columns and pointed arches were also portions of the early foundation. In the west front of the tower was a large pointed window, now bricked up, and in the side walls are the jambs and heads of two similar, but smaller windows, also obliterated on the outside.

The Practical Mechanics' Journal.

THE current part of this journal continues the description of Mallet's method of mounting cannon, and a paper on the "Annealing Temperatures of Metals and Crystallisation Produced by Vibration." An article on sea-wall engineering treats of the Dymchurch wall of Romney-marsh. Again, we meet with the history of the sewing machine in its thirty-fifth part, bringing the subject down to 1860. There are several detailed notices of recent patents and reports of actions on patents. "The Mechanics' Journal" is conducted with spirit.

IMPROVEMENTS IN BUILDING, &c.

IN THE CONSTRUCTION OF BUILDINGS AND SHIPS WITH A VIEW TO THE EXTINGUISHMENT OF ACCIDENTAL FIRE THEREIN, AND ALSO THE VENTILATION THEREOF.—Dated July 22, 1861.—J. Beattie, South Lambeth.

This invention is carried into effect in the following manner:—The patentee places in or between, or connects with, the brickwork or other material of which the main building is composed, one or more main pipe or pipes of suitable metal, and of sufficient strength and bore, from the basement or ground floor to the roof or other part or parts of such building; and he has branch pipes of suitable metal, bore, and strength from such main pipe or pipes into each floor, and, if required, into each room, and he carries such branch pipes round the ceiling or other part or parts of such rooms, and other parts of the building; and he has perforations in such branch pipes, and moulth or roses, made ornamentally or otherwise. He also has suitable joints and cocks, or other apparatus, so that, when a fire has taken place in any or more of such room or rooms, the water can be forced by steam or other power from below through the main pipe and branch or branches into such room or rooms as required for the extinguishment of the fire therein. He also, in some cases, constructs fines in different parts of the building for the passage of water for cooling the walls and pipes, with requisite inlets and outlets. He also, at other times, forces or partially exhausts air, by means of a fan or other suitable apparatus, worked by steam or other power, through the main and branch pipes, for the purpose of ventilating the rooms of such buildings.

PREVENTING THE EXTENSION OF FIRE IN BUILDINGS.—Dated July 23, 1861.—C. Batty.

This consists in so arranging the ceilings that they may be separated from the floor immediately above, by a space through which a current of air passes with a great velocity when the ceiling becomes hot by a fire beneath, thus, it is said, keeping the inside or top surface of the ceiling cool, or comparatively so, and preventing the floor above becoming heated.

DRYING BRICKS, &c.—Dated July 24, 1861.—A. J. D. Seitz.

For the purposes of this invention a closed drying-room is constructed, provided with a ceiling having openings therein, closed by shutters, and having skylights. This room is fitted with benches constructed of flags, quails, slates, or other porous materials, to receive the bricks or other articles to be dried, spaces being left between for the passage of barrows and workmen. In this drying-room is arranged a system of pipes, heated, by preference, by means of the waste steam from the steam engine, as being more economical, but a separate boiler may be employed if necessary.

MACHINE FOR CUTTING WOOD.—Dated July 23, 1861.—R. Thompson.

This consists in an arrangement of machinery whereby revolving cutting tools for chasing, grooving, moulding, &c., can be moved (while in the operation of cutting or otherwise) in any direction required by the workman, giving him complete command over

the tool to follow any line of cut, traced out, without in any way interfering with the revolving action of the cutter or other driving power. The principle consists in mounting the cutting tools in a carrier or traverse block, such block being free to travel along a beam, revolving motion being communicated to the cutter by a gut or band, actuated by a double-grooved pulley revolving freely upon a shaft.

MACHINERY FOR DRESSING SLATES.—Dated July 27, 1861.—C. E. Amos and J. Francis.

This invention relates to a novel arrangement of machinery whereby roofing slates may be cut, trimmed, or dressed to the different sizes used for building purposes. The machine consists of a rectangular frame, which may, if necessary, be mounted on wheels for the convenience of transporting or removing the machine from one locality to another. This frame is provided with a fixed knife, and also suitable bearings for a lever or "sword arm," which carries a movable knife. The "sword arm" or lever is suspended by a spring or springs, so that, when in a normal position, the movable cutting edge is raised above the lower knife edge, and the two edges resemble a pair of open "shears," and act in the same manner. A treadle frame is attached by means of a link to a lever which is upon the same spindle as the "sword arm," and the knife edges are brought together by the pressure of the foot of the workman, or, if desired, the machine may be worked by mechanical power, by applying power to the treadle lever; or the treadle lever may be dispensed with and the power may be applied direct to the "sword arm." The spindle of the "sword arm" is made adjustable to compensate for wear in the cutting edge and other working parts, and a gauge plate with suitable marks or points, corresponding to the different recognised sizes of roofing slates, is placed on the framework so that the rough slates may be laid in their proper places and adjusted with facility.

IN THE CONSTRUCTION OF BUILDINGS, AND IN MATERIALS AND MACHINERY TO BE EMPLOYED THEREIN.—Dated July 30, 1861.—M. Allen.

In carrying out this invention the inventor proposes to construct staircases in such a manner as to economise the space they usually occupy, and to render the same fire-proof by insulating them from every internal portion of the building. This he proposes to accomplish by arranging the stairs in a semi-circular or other recess in the outer wall of a building, extending from its foundation to the roof, and having no openings whatever on its inner side; this recess is made with openings as doorways on its outer face, through which the stairs may be approached on one floor, and terminate on the floor by doorways or openings leading to balconies running along that part of the building in which the stairs are placed, and by means of which access is obtained to the several floors or flats. As regards the improved materials, they consist of burnt clay, cinders, slag, coke, culm, or clinkers, and other calcined substances of similar character thereto, and possessing an irregular woven porous surface, mixed with Portland or other cement or lime. As regards the machinery, it consists of a machine made in the following way for the better mixing and incorporating together the aforesaid materials or any other materials used in building:—The inventor takes a box or vessel, the under side of which is movable, in which he arranges horizontally a revolving shaft, having a number of knives, pegs, or rakes, inserted or fixed therein; the materials to be mixed are thrown into the said box or vessel, and the shaft driven round until the whole of the materials have become thoroughly mixed together; the lower part of the box or vessel is then opened, and its contents allowed to flow out ready for use.

Correspondence.

SAFETY HAVENS FOR MINERS.

SIR,—Colliery proprietors are, doubtless, now impressed with the necessity of universally having two shafts to each pit, and also a communication or staple between the upper and lower seams of coal, the want of which caused the fatality during the late tragedy. Yet there is another safety-valve which would protect the lives of miners, if the brattice should be destroyed by fire, explosion, or otherwise, and as it has not been noticed by others, permit me to describe my idea. Division of a shaft generally occasions sufficient ventilation in the whole of a pit to enable miners to work in any part. When a brattice is disarranged, the upward current of gas and downward passage of air cease, and probably at the same time the mode for the men leaving the pit is unguarded. Inexpressible relief would be conferred on the imprisoned miners by the facility at such a time to escape to a selected and particular part in any of the seams, where they could congregate in safety and wait for relief. This object could be secured by embedding under the brick or wooden casing of the shaft a diaphragmatic pipe or a double concentric pipe laid from the outer air to the spots chosen as "havens of safety" in each of the seams, which would be thus ventilated perfectly distinct from, and independent of, the mode adopted for the remainder of the pit. This is merely an extension of the brattice principle, and a plan often used for ventilating particular rooms in buildings. It may be desirable to have the power at each of the selected spots to close the ventilating pipes in any of the other seams where the use of it may not be required.

GEORGE WALCOTT, C.E.

24, Abchurch-lane, London, E.C., February 15th, 1862.

TENDERS.

CORN EXCHANGE, LEIGHTON BUZZARD.

For erecting a corn exchange and public-rooms, at Leighton Buzzard. Messrs. Bellamy and Hardy, architects, Lincoln. Quantities supplied by Mr. James Barnett, London.

J. Perry, Junr., Hackney	£7,165 0	J. W. Sawyer, London	£3,950 0
Hardman and Co., London	6,750 0	S. Holdstock, Leighton	5,756 5
J. Nutt, London	6,416 0	William Mead, Leighton	5,685 0
Geo. Cooper, Aylesbury	6,320 0	Nash and Co., Leighton	5,600 0
Geo. John Carter, London	6,065 0	W. R. Rowe, London	5,577 0
Geo. Dawson, Leighton	6,058 10	J. Doddington, Wellington	5,120 0
E. Conder, London	6,057 0	Osborne Brothers, Leicester	4,988 0

* Accepted.

CHAPEL, SHOREHAM.

For erecting a chapel at Shoreham, Sussex. Mr. Horatio N. Gouly, architect, Brighton. Lockyer £392 | J. and W. Goddard (accepted) | £300 || R. Patching and Son | 367 | | |

CHURCH, EAST HAM.

For erecting a new church at East Ham. Mr. A. W. Blomfield, M.A., architect. Quantities supplied by Mr. J. A. Bunker.

Bird	£3,439	Child, Son, and Martin	£3,096
J. and W. Sanders	3,588	G. Carter	2,990
Mansfield and Son	3,272	Browne and Robinson	2,959
Myers and Sons	3,259	Turner and Sons	2,939

GAS METER TESTING-HOUSE, SOUTHWARK.

The tender of Mr. Nixon has been accepted by the Metropolitan Board of Works for the erection of a temporary gas-meter testing-house in Castle-street, Southwark, at £1,598. Estimate of Mr. Vulliamy, superintending architect, £1,450.

NEW SCULPTURES FOR THE BRITISH MUSEUM.—A group of Europa and the Bull, of the size of life, found in the ancient Roman amphitheatre at Gortina, in Crete, has lately been exhumed, and has been brought to England by her Majesty's ship *Scourge*; within the last few days it has been deposited within the British Museum, near the Carian and Cyrenian sculptures.

* Neve, Seymour, and Newton give the year in which St. Giles' Church was built as 1090, while Entick and Thornton say 1099.

† It is somewhat curious that Stow should have given 1099 as the date of St. Giles' Church, while he here names the reign of William the Conqueror, who died in the year 1067.

COMPETITIONS OPEN.

BRIDGES.

DUBLIN.—The committee appointed to carry out the new Carlisle bridge (Dublin) scheme, require plans and specifications for the erection of the structure on the present site, the full breadth of Sackville-street. £200 will be paid for the best and most approved plan, £100 for the second, and £50 for the third. The plans, &c., to be the property of the committee, to whom applications are to be made at the Imperial Hotel, Sackville-street, Dublin.

HARBOR WORKS.

LYME REGIS.—The Borough Council require a plan, specification, and estimate for carrying out certain works at the Cobb or harbor there; to be sent in to G. Hingerton, town clerk, by March 1st, when the successful competitor will receive 15 guineas. Full particulars can be had at the offices of the Cobb clerk or town clerk, Lyme Regis.

LAYING OUT.

TRANMERE.—The directors of the Tranmere Freehold Land Society desire plans, before the 25th March, for laying out and allotting the estate belonging to the Society, in Higher Tranmere; consisting of about 40 statute acres. Premiums will be given for the best and second-best plans. Each plan to be accompanied with an estimate of the cost of the formation and construction of the roads and sewers, and also of the laying out of the land. Particulars from Mr. John Quinn, Chairman of the Society, 22, Lord-street, Liverpool; or from Mr. H. P. Priest, Secretary, Market-cross-chambers, 19, Market-street, Birkenhead.

CONTRACTS OPEN.

MANSTON, &c.

SOUTHAMPTON.—For the erection of a mansion, &c. Particulars from Guillaume, Parmenter, and Guillaume, architects, &c., Southampton.

PAVILION.

WORCESTER.—For the erection of a pavilion, to be constructed of wood and glass, for the Worcester Pleasure Grounds Company, Limited. Plans, &c., at the offices of Mr. A. P. Watkins, 50, Foregate-street, Worcester, and bills of quantities obtained of the architect, Mr. Cranston, No. 1, Temple-row-west, Birmingham. Tenders to be sent to the secretary, endorsed "Tender for Pavilion," on or before the 8th March.

PIER.

BLACKPOOL.—For the erection of an iron landing and promenade pier, for the Blackpool Pier Company, (Limited). Plans, &c., on Monday the 3rd March next, at the office of Messrs. Birrell, the engineers to the company, 43, Parliament-street, London, S.W., or at the Company's office, Blackpool; and bills of quantities will be furnished on payment of ten shillings. Sealed tenders by the 10th March next, addressed to the chairman of the Blackpool Pier Company, Blackpool.

PRISONS.

KENT.—For certain works to be done at the county prisons, Maidstone, to form store-room, &c. Plans, &c., with Martin Bulmer, county surveyor, Maidstone. Sealed tenders, endorsed "Tender for Works at the County Prisons, Maidstone," are to be delivered to Mr. Bulmer, by four p.m., on the 27th inst., and persons tendering are to be in attendance at the Courts of Justice, Maidstone, at half-past twelve on the 28th February.

CHURCHES.

BIDEFORD.—For rebuilding Bideford Church. Plans, &c., on application to the rector, till the 3rd March. Sealed tenders addressed to the secretary, on or before March 10th.

WAKEFIELD.—For the erection of a new parish church, at Ossett, near Wakefield. Plans, &c., with W. Henry Crossland, architect, Harrison-road, Halifax, to the 28th inst. Sealed tenders, endorsed "Tender for the New Parish Church, Ossett," to be delivered to Mr. Crossland, on or before 3rd March.

BIDDULPH.—For the erection of a new church on Biddulph Moor. Plans, &c., with the Rev. Francis Gordon, the Parsonage, Biddulph Moor, near Congleton. Tenders to be addressed, sealed, to Mr. Gordon, and none received after the last day of February.

IRELAND.—For the internal fitting up and repairs of the churches of Carnacastle, co. Antrim; Seagoe, co. Armagh; and for the enclosure of the church of Upper Falls, co. Antrim. Plans and specifications with the resident ministers of the parishes. Tenders to be forwarded, sealed, prepaid, and addressed thus:—"Proposal for ———, the Church of ———," "The Ecclesiastical Commissioners for Ireland, Dublin." by March 1.

CHAPELS.

BRISTOL.—For the erection of the Clifton Wesleyan Chapel. Drawings, &c., with Fosters and Wood, architects, 6, Park-street, Bristol, till the 28th inst., on or before which the tenders are to be sent to the architects, sealed and endorsed "Tenders for Clifton Wesleyan Chapel."

BRADFORD.—For the erection of the new Baptist Chapel, Manningham-lane, Bradford. Drawings, &c., at the school-room of Zion Chapel, Bradford, Yorkshire. Tenders for the whole or parts of the works will be received up to 10 o'clock on March 8th.

WOOLWICH.—For a chapel to be erected near Woolwich, Kent. Drawings, &c., on application to Giles and Brookhouse, architects, Victoria-chambers, Derby, or at the residence of the Rev. R. Sergeant, 11, Brewer-street, Woolwich. Tenders to be delivered to the Rev. R. Sergeant not later than 12 noon on the 27th inst., endorsed "Tenders for new Chapel."

CROYLAND.—For the erection of a new school-room and additions to the Wesleyan Chapel, Croyland. Plans and specifications at Mr. Sanderson's, chemist, Croyland, where tenders to be addressed to and delivered on or before the 1st March.

LANCASHIRE.—For the erection of a dwelling-house, together with spacious business premises, proposed to be built in Lytham, Lancashire. Plans, &c., with Mr. S. Wartenberg, the Bazaar, Lytham. Tenders not later than 26th February.

PARSONAGE.

PERTH (N.B.).—For the erection of a new house and office, at Dunning, Perth, N.B. Drawings, &c., with the architects, William G. Habersham and Pite, 38, Bloomsbury-square, London; and on application to the clerk of works (Mr. Jones), at Duncrub-park, Dunning.

FARM BUILDINGS.

IRELAND.—For the erection of a set of farm offices on Mrs. Hackett's farm, at Cowanstown, near Maynooth, the estate of the Duke of Leinster. Plans, &c., at 13, Lower Dominick-street, Dublin, up to the 28th inst. Tenders by the above date to Francis Trench, Esq., Newlands, Tallaght.

RAILWAY WORKS.

IRELAND.—For the construction of the works upon the Midland Counties and Shannon Junction Railway, between Clara and Banagher, and commencing at a point a mile and a half from the Junction of the Midland Great Western and Great Southern and Western Railway Companies, on to Banagher, a distance of about 17½ miles. Plans, specifications, quantities, &c., are to be seen with the engineers of the Company, John Hill, Esq., Tullamore, and Henry Brett, Esq., 8, Harrington-street, Dublin. Tenders to be sent in not later than the 8th March, at 12 o'clock noon, endorsed "Tender for Works," and addressed to J. Fowler Nicoll, secretary, offices of the Company, 53, Lower Dominick-street, Dublin.

STAFFORDSHIRE.—For the construction and extension of the line of the Staffordshire Potteries Street Railway Company from Hanley to Longton, in two sections:—Section and Contract No. 1, from Hanley to Stoke. Section and Contract No. 2, from Stoke to Longton. Drawings, &c., at the engineer's offices. Form of tenders, to be obtained from the secretary, to be delivered at the Company's offices, 6, Trinity-street, Hanley, on or before the 26th of February.

WATERWORKS.

WELCHPOOL.—For laying and jointing about 6,500 yards of cast-iron pipes, and for providing and fixing sluice cocks, hydrants, and other works, for the Welchpool Waterworks. Specifications, &c., may be obtained of Messrs. Robert Dymond and Sons, surveyors, Exeter, at 10s. 6d. each. Tenders by March 10.

MILITARY WORKS.

SCOTLAND.—For contracting from 1st April, 1862, to 31st March, 1865, inclusive, for the performance of such artificers' work as may be required at the under-mentioned stations,

viz.:—Edinburgh Castle; Piershill Barracks; Leith Fort, Martello Tower, and Blackness Castle; Greenlaw Military Prison and Barracks; Perth Barracks; Dundee Barracks and Broughty Castle; Dunbar Barracks; Berwick and Holy Island; Glasgow Barracks; Dumfries Castle; Paisley Barracks; Hamilton Barracks; Ayr Barracks; Fort Matilda; Stirling Castle; Aberdeen Barracks; Beach and Torry Point Batteries; Forts George, Augustus, and William. In all cases, the seven tenders are to be in one tender for each station, and the contracts to be determinable at any period after the first year, on either party giving to the other three months' notice in writing. Any person may tender for one or more of the above stations. Parties applying for forms of tender must give sufficient guarantee to the entire satisfaction of the commanding royal engineer of their being fully competent to undertake and execute any new works or repairs that may from time to time be ordered on the contract schedules. Every information on application to the Royal Engineer or Barrack offices, at the several stations herein named, together with printed schedules of the prices, with the terms of contract and letter of tender for the several descriptions of artificers' work, to the 27th February, upon making a deposit of five shillings for the same. The letter of tender to be sealed, and transmitted under cover to the Director of Contracts, War Department, Pall-mall, London, S.W., so that it may be received on or before the 10th March, 1862, and to be marked on the left-hand corner of the envelope, "Tender for Works at ———."

RESERVOIR.

RYDE.—For constructing a reservoir at Knighton, for the Ryde Commissioners. Plans, &c., with William Henry Pullen, clerk, Town-hall, Ryde; or at Messrs. Easton, Amos, and Sons, Grove, Southwark. Sealed tenders to be sent to me on or before Monday, the 24th day of February instant. No pledge is given to accept the lowest or any tender.

DWELLING HOUSES.

HERTS.—For the erection of a dwelling-house at Lottford, Standon, near Ware, Herts. Plans, &c., with Mr. Chapman, Lottford, and at the office of the architect, Charles Chapman, St. Mildred's-court, Poultry, E.C. The quantities will be supplied, and no tenders will be accepted unless based on the same. Tenders will be delivered on the 27th instant, at the office of the architect.

ROADMAKING, &c.

IRELAND.—For the following works, in the barony of Gorey, in the county of Wexford:—1.—For making a new line of road from the corner of the Post-office in Gorey, to Edward Foley's cottage in Ballyraheen, containing about 415 perches; not to exceed £500. 2.—For making a new line of road from Gorey to Tinahely, containing about 300 perches, in the townland of Ballingarry. Plans, forms of tender, &c., obtained, at the office of Henry E. Wynne, secretary to the Grand Jury, County Court House, Wexford.

MANCHESTER.—For sewerage, levelling, paving, flagging, and channelling so much of Sloan-street, and the footpaths at the sides thereof, as lies between Moss-lane and Raby-street, in Moss Side. Plans, &c., at the office of Mr. John Wolstencroft, surveyor to the Board, Moss-lane east, Moss Side.

SEWERAGE.

OXFORD.—For constructing an open sewer along a portion of the Trill Mill Stream in the city of Oxford. The drawings, &c., at the Commissioners' office, Town Hall, Oxford; or particulars obtained from Mr. John Galpin, surveyor. Tenders, on printed forms, which may be obtained either of the clerk or the surveyor to the Commissioners, must be delivered, sealed, to Frederick J. Morrell, clerk to the Commissioners, No. 4, St. Giles's-street, Oxford, on or before twelve noon, on 10th March, endorsed "Tender for Open Sewer."

DRAINAGE.

HANTS.—For laying pipes, erecting filter tanks, and executing other works for the drainage of the town of Alton. Copies of the quantities, with forms of tender (price 2s. 6d. each) may be obtained, and the specifications and drawings inspected, on application to William Trimmer, clerk to the Board, Alton; or to Mr. T. W. Penfold, 2, Charlotte-row, Mansion-house, London. Tenders to be sent in on or before 4th March.

ROTHERHAM.—For the execution of such drains as the Vestry may direct to be performed in the parish of Rotherhithe. Printed forms of tender and schedule of works, with conditions, may be obtained at the clerk's offices, 61, Paradise-street, Rotherhithe; or of Mr. George Legg, the surveyor, 61, King William-street, London-bridge. Tenders, accompanied with the name of one responsible person as surety, to be sent to the clerk's offices on or before 12 o'clock on the 4th of March.

SUPPLY, &c.

SWANSEA.—For the following contracts for the Swansea Local Board of Health. Contract No. 2.—For supplying cast-iron water-pipes, and other castings. Contract No. 3.—For supplying sluice valves, hydrants, and other steel fittings. Contract No. 4.—For laying and jointing cast-iron water-pipes, fixing sluice valves and hydrants, and for other works. Duplicate specifications, &c., on payment of £1 for each contract, on application at the office of the town-clerk, Guildhall, Swansea; or at the office of Robert Rawlinson, Esq., Civil Engineer, 34, Parliament-street, Westminster. Sealed tenders, endorsed, "Tender for Contract No. 2, 3, or 4," must be forwarded to the office of C. B. Mansfield, town clerk, Guildhall, Swansea, on or before the 25th Feb.

ROTHERHAM.—For supplying, for the use of the Vestry of the parish of Rotherhithe, Guernsey granite spalls, York paving, half-sovereigns for carriage paving, curb, &c. for one year, to be delivered alongside wharf at Rotherhithe. Forms of tender and schedule of articles to be supplied may be obtained at the clerk's office, 61, Paradise-street, Rotherhithe. Tenders to be sent to the clerk's office by 12 noon of the 4th March.

BRIDGE.

BOLTON.—For the erection of a timber bridge across the river Irwell, at Agcroft-bridge. Plans and particulars at Mr. A. Pilling's, Contractor's office, Davenport-street, Bolton.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

F. R. D. (Birmingham).—Next week.

A. SUSSEX.—Will be completed very shortly; notice will be given.

W. C. R.—Lists will be given as soon as space allows. 2. We cannot say; they are specially prepared for us at some cost.

J. L.—Photographs of plans received; shall be looked into; send particulars.

AN ARCHITECT'S PUPIL (Bristol).—We cannot give prominence to statement unless writer's name and address is furnished for our private information.

T.—Should be satisfied this week.

JACK PLANE.—Next week.

C. T.—Send sketches.

J. M. F.—Yes; view shall be engraved.

W. 1.—The total amount subscribed to the Albert Memorial Fund is nearly £30,000. 2. It is impossible to say.

W. H.—Thanks.

S.—(Glasgow).—Ditto.

P. N. W.—Shall hear from us.

M. W.—Letter has been mislaid; reply shall be sent.

F. V.—Beyond our province.

X. R. X. 1.—Received. 2. Before long.

R. B.—Much obliged.

NOTICE.

The Seventh Volume of the BUILDING NEWS is now ready, bound in cloth, price 21s. Subscribers can have their copies bound, either with or without the advertisement pages, for 4s. 6d., on sending them to the office. Cases ready for binding the volume may be had price 2s. each.

* * * All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old Dowell-court, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 18 to 21, Old Dowell-court. Advertisements are received up to six o'clock on Thursdays.

THE ALBERT MEMORIAL.

Y LORD,—I have had the honour of receiving, and of submitting to the Queen, your lordship's letter of the 18th inst., communicating the proceedings which have taken place with the view to the erection of a national memorial monument to the much lamented Prince Consort.

The Queen feels grateful from the bottom of her heart for the universal sympathy that has been expressed for her in her deep affliction. But it is still more soothing to her feelings to know that the noble character, the truly princely nature of him whose loss has bowed her to the earth with a sense of desolation and misery that every day, alas! serves only to increase, is appreciated by the country; that the benefits he has been instrumental in conferring on the nation, the good he has brought since he first came amongst us, to effect which he may be truly said alone to have lived—are understood and acknowledged.

The Queen is also much touched by the feeling which has led the promoters of the movement for erecting a national monument to the Prince to leave the nature of that monument to her decision. It is a subject on which there must be necessarily some difference of opinion. Many, influenced doubtless by the belief that there was nothing which the Prince himself had so deeply and constantly at heart as the promotion of whatever might tend to the advantage of the community at large, or any portion of it, have thought that the most appropriate monument to his memory would be to commemorate his name with some great work that should have that end in view; and the Queen cannot but be gratified by this proof of a just appreciation of his character.

But it would probably be difficult to procure anything like agreement as to the nature of the institution which should thus bear his honoured name, and it would be inexpressibly painful to the Queen were any controversy to arise on such a subject.

It would be also more in accordance with her own feelings, and she believes with those of the country in general, that the monument should be more directly personal to its object—should be, in fact, more than what is commonly indicated by the word. Even so, it is probable that opinions may differ as to the character that would be most appropriate for such a monument.

But the Queen is confident that the same good feeling which has led to the reference of the subject for her decision will lead to a cordial acquiescence in it, to the cheerful abandonment of individual views, and to a unanimous working together to effect the object all have at heart.

After giving the subject her best consideration, her Majesty has come to the conclusion that nothing would be more appropriate, provided it is on a scale of sufficient grandeur, than an obelisk to be erected in Hyde-park, on the site of the Great Exhibition of 1851, or on some spot immediately contiguous to it; nor would any proposal that could be made be more gratifying to the Queen personally, for she can never forget that the Prince himself had highly approved of the idea of a memorial of this character being raised on the same spot in remembrance of the Great Exhibition.

There would also be this advantage in a monument of this nature, that several of the highest artists of the day might take part in its execution, for there would be room enough at its base for various groups of statuary, each of which might be entrusted to a different artist.

In the selection of the artists to be employed in the choice of a design, and in the considerations of the details of execution, the Queen would wish to obtain the best advice, and she would therefore desire to call to her assistance a small committee, consisting of persons in whom she could feel satisfied that the country would repose entire confidence.

I have written, by her Majesty's commands, to those whose assistance she thus desires to obtain, and will lose no time, as soon as I have received their answers, in communicating their names to your lordship.

I have the honour to be, &c.,

C. GREY.

MY LORD,—The Queen wishes me to add a few words to the answer to your letter, which you will receive with this, expressive in a more especial manner of her Majesty's personal wishes.

She is aware that she could not with any propriety contribute, as a wife, to a monument to her husband; but she is also the Sovereign of

this great empire, and, as such, she cannot but think she may be allowed to join with the nation in the expression of a nation's gratitude to one to whom it owes so much.

Who has a dearer interest than the Queen in the well-being and the happiness of the people? And if it has pleased God to make her reign so far happy and prosperous, to whom, under Divine Providence, is this so much owing, as to her beloved husband—in all matters of doubt or difficulty her wise counsel, her unflinching guide and support?

No one can know, as the Queen knows, how his every thought was devoted to the country—how his only aim was to improve the condition of the people, and to promote their best interests. Indeed, his untiring exertions in furtherance of these objects tended, in all probability, to shorten his precious life.

Surely, then, it will not be out of place that, following the movement of her people, the Queen should be allowed to consider how she may best take part with them in doing honour to her beloved Prince, as that the proposed monument may be recorded to future ages as reared by the Queen and people of a grateful country to the memory of its benefactor.

I have the honour to be, &c.,

C. GREY.

Osborne, Feb. 19, 1862.

The Right Hon. the Lord Mayor, &c.

Thus does the Queen of England speak to her people.

It was for a considerable time a matter for regret with a large number of men that the Committee entrusted with the fund for rearing a suitable monument to the late Prince Consort neglected, at the first mention of the proposal, to state distinctly the form which the memorial was to take. Scheme after scheme has, in consequence of this neglect, been paraded before the public, backed by zealous advocates, and gathering together many partisans—all of whom were likely to take umbrage if their energies in favour of charitable gratitude were thrown away. The uncertainty long continued, in which the subscribers were kept, fostered all kinds of wild suggestions, and made them painfully prominent; at length, as might have been anticipated, suggestions were launched for dividing the collected sum, in order to satisfy the many claimants for means to commemorate the illustrious patron of the several bodies. It is true that the "monumental character" of the memorial was, at the first meeting, spoken of, but it was the uttered opinion of an individual only, and it was not given by authority of the immediate and responsible promoters. Nothing, perhaps, shows more fully the esteem in which the Prince Consort was held, and the deep sympathy which all classes of English men feel for our widowed Queen, than the fact that so large a sum has been raised without other than a general object of preserving to future ages some record of the blameless Prince. But if the silence of the Committee occasioned regret, that regret was deepened when it became known that the members composing it were about to shift their responsibility on to the shoulders of the Queen, and to interpose her Majesty between the Committee and any dissatisfaction which the decision might occasion. Every one has read of the amiable and loving regard with which the Queen cherishes every institution which her husband toiled for. The pardonable bias with which she might lean to aught which he loved and patronised was remembered with anxiety. The guardians of these countless institutions had not been slow to make known their wants and wishes. If affection had warped the judgment of the Queen, and prompted her to scatter this Memorial Fund broadcast over many charitable institutions, we could scarcely have been surprised. The temptation was great, perhaps, for the wife to relieve, in memory of her husband, the sorrows which he ministered to; but the Queen of England has soared above the embarrassing and wrong position in which she was thoughtlessly placed by the Committee, and in the most touching letters which were ever addressed by a sovereign to its subjects, makes her decision known, and directs our onward course. Instinctively she appears to have seen the difficulty of agreement in any so-called utilitarian scheme, whilst acknowledging the just appreciation of his character which have prompted suggestions in that direction. After giving the subject her best consideration, her Majesty has declared in favour of an obelisk, with groups of statuary at the base, each of which might be entrusted to a different artist. To choose a design, and in the consideration of the details of execution, the Queen will call to her assistance a small committee. The form of the monument being now definitely settled, we hope we shall have no more discussion on that point, but that the artists will be allowed to make the monument, by its display of art as well as by its grandeur, worthy of the Prince's noble character, and also of "the Queen and people of a grateful country," who thereby honour its benefactor.

An obelisk is, perhaps, the oldest as well as the most enduring form of monument which could have been chosen. We have not, it is true, been particularly happy in our culture of the idea in England. The obelisks in the Fleet valley and in the Blackfriars-road allow ample

scope for improvement; but it must be admitted that our other public monuments are equally unsatisfactory. We believe the miserable results have been more owing to official interference and to bad subjects than to artistic incapacity. Our English sculptors are equal to any which other nations now can show, even if we reckon Baron Marochetti a foreigner. Foley's statue of Lord Hardinge alone is enough to point to for evidence of our skill in equestrian statues; Gibson's bas-reliefs will hold their own against the chiselled marble of any modern nation; and numerous other Englishmen may, by merit only, take a foremost place when occasion demands Art's tribute to a great and glorious Prince.

As every one knows, ancient Egypt has supplied nearly all the obelisks which have been reared in our modern cities, and more than one-half of those transported from the valley of the Nile are to be seen in Rome; but they have all, more or less, this defect, that they speak of the death of the nation which so far disregarded her antiquities as to banish or barter them away. Their mystic characters preach no lesson to the people. The modern inscriptions occasionally found cut upon them tell us that they have been dragged to their present sites to gratify a conqueror's vanity. That in the space in front of St. Peter's is put ignobly to serve as a gnomon to a monster dial. None of them quicken the "patriotic tide," as does Rauch's group in honour of the Great Frederick, or the Napoleon Column in the Place Vendôme. They are weak and spiritless, not because they are obelisks, but because they were designed for one purpose, and devoted ignorantly to another.

In the Albert memorial we have an opportunity, then, of making the obelisk a monument expressive of English feeling, and of the state which art has arrived at in this nineteenth century. For the first time since the days of the Pharaohs, with one or two insignificant exceptions, a stupendous obelisk will be designed and carved instead of being simply erected, and it will record the sorrow which was endured by a Queen and her people for a great loss in place of the gratified vanity which conquest had begotten.

It is well for us to consider beforehand how we are prepared to execute this work. As regards material, we may dispense with a special stone committee, and thus avoid all necessity for patented preservative silicates. Upon granite and bronze we can hand down our Prince's memory. There are quarries near Liskeard and Penzance where monoliths may be procured at least 100 feet in length and 10 or 12 feet square. Aberdeen can supply us with a variety of granite if we desire coloured ornamental accessories. Although an obelisk is decided upon, it will not, we presume, be a simple monolith on a square pedestal, with sculptured bas-reliefs. Groups of sculpture will surround the base, and with these we must try to make conspicuous the various attributes of him in whose honour the monument is built. We know with what riches the pyramid or Mausolus was encircled. We would have the Albert memorial equally famous and equally deserving of such fame. But the great difficulties will be more in the preparation of the general design than of the sculptured portions of it. Our sculptors are, we believe, fully equal to the latter undertaking, but we doubt their ability to execute the former satisfactorily. The architecture of sculptors' monuments is almost invariably bad, for the simple reason that sculptors have not now-a-days the time, even if they have the inclination, to study the sister art. They regard architecture as a musician looks upon the libretto of his opera—as a simple material for the display of his abilities, to which it must, of course, be subservient.

We trust that the Committee which her Majesty will call to aid her in selecting a design, will not fall into an error of this description; that they will recollect that in all the greatest works of antiquity, architects were associated with sculptors. Phidias could deck the Temple of Minerva with priceless sculpture, but it was out of his power to design that majestic framework for it, which even now, despoiled by time and man, stands in melancholy grandeur, the glorious crown upon the Hill of Mars. There have been sculptors, we admit, who were likewise great architects and distinguished painters, but Michel Angelos are not to be had by asking for them, and assuredly we shall find no men of equal calibre in modern London. We shall be content if the work be well done by several hands, and if different minds can be brought to labour at one design. Moreover, a wish is expressed in her Majesty's letter that more than one sculptor shall be employed upon the memorial. We foresee considerable confusion and much unpleasantness if one of these gentlemen should be exalted above his fellows by being entrusted with the conception of the main design for the monument. The difficulty of selecting a sculptor to do that portion of the work would be great.

The preparation of the design lies undoubtedly within an architect's province, and he certainly ought to be best able, on account of his training, to do it. We would not forbid a sculptor trying his hand at it, but at the same time we would suggest that a preliminary competition, limited or unlimited, as the Committee may decide, should take place amongst architects for the general arrangement of the memorial;

it should be distinctly understood that the position of the sculptured groups, &c., was alone to be shown, that it was not a competition for the sculptured work at all, but simply and solely for the shell of the monument, without reference to the detail of the sculpture which was afterwards to adorn it. The bestowal of commissions upon the different sculptors would follow, as a natural consequence, the selection of the architectural design, and all would work harmoniously together to show the world that the right men are not wanting in England when a great event demands their services, and that the Prince who in life watched for every opportunity to benefit the people, and to infuse into them the sweet influence of art, would in death not only awaken in the people's breasts appreciation of his noble character, but stimulate our artists to rear in England one good monument to the one Prince who has been worthy of it; a monument which would deserve to be inscribed with the closing words of the Queen's letter, and tell to future ages that it was "reared by the Queen and people of a grateful country to the memory of its benefactor."

Her Majesty has named the Earls of Derby and Clarendon, Sir Charles Eastlake, and the Right Hon. William Cubitt, to form the Committee referred to.

"THOUGHTS ON DESIGNING A PICTURE GALLERY."

A DIFFICULT thing to design is, consequently, generally a good thing to design. The very difficulty begets extra thoughts and extra work, and that extra thought and work brings out additional skill. Moreover, if the circumstances are such that the usual decorations should be dispensed with, so much the better, at least for once, for the way is then left open for the use of decorations of an unusual kind; and if the difficulty in designing comes from the difficulties of planning or arrangement—if the best mode of arrangement is still a matter of differing opinion among authorities on the subject, still more interesting is the task; and more interesting still does it become if the object of the building is one in which our education and favourite studies cause us to take a deep interest.

These thoughts have arisen while thinking on the subject of picture galleries—of the difficulties, both in design and arrangement, that they present—and yet on the many great and unusual facilities they afford for original treatment, and unusual materials, modes, and degrees of decoration.

We will first enter briefly into the best mode of lighting, which so intimately concerns the external architectural treatment, and the best mode of dividing and arranging the pictures, which so much affects the mode of lighting. The great authorities differ much, but the majority seem to agree upon one important principle, namely, that the window or light by which a picture is seen, and the picture itself, ought not to come within the range of vision at the same time; and yet, although the fullest development of this principle was practically carried out many years ago in a building erected expressly for the temporary exhibition of a collection of the pictures of Sir Benjamin West, and has since been carried out in one or two private galleries, yet out of all the large public galleries of Europe, there is but one room that is erected for the purpose of giving the pictures therein exhibited the most favourable light possible in accordance with this principle.

The galleries of Berlin and Vienna are lighted with side lights. The Louvre is partly lighted in one manner and partly in the other. Our National Gallery and Royal Academy rooms, and those at South Kensington, are lighted from above. The older Pinacotheca, at Munich, is a well lighted and well arranged picture gallery, and, for ordinary purposes, seems a very good model to keep in mind. This combines each mode—often a wise course when authorities differ. In the same building we find the large saloons lighted from above, and the small cabinets lighted from the side. At the new gallery at Dresden the same system has been carried out; the larger pictures are lighted from above, and the smaller cabinet pictures from the side.

But, as mentioned above, there is one particular room of one gallery in Europe where the principle so successful in the advantageous display of Sir Benjamin West's pictures, and which, in a different form, was used some time ago for a temporary exhibition at Rome, has been permanently and successfully carried out. This is in the artistic city of Munich. The ex-King Ludwig knows well what is good both in and for pictures, and is sure to have whatever will show them to the greatest advantage.

The gallery where it has been adopted is the new Pinacotheca, a building erected and expressly set apart for modern pictures, whereas the older Pinacotheca contains the older masters only. The room referred to is that occupied by the pictures of the landscape painter Rathman, painted in Greece by the command of King Ludwig; and the mode of lighting employed seems much the same as that described by Messrs. Papworth in their valuable little work on the subject.*

The principle of not seeing the pictures and the source from which the light is obtained at the same time is effected by means of a screen or wall supported by columns. These, then, are the three variations in the way in which picture galleries are lighted; whether this last mode is so great an improvement as to make up for the inconvenience of the columns, may be doubtful, they are not, however, necessary; a suspended roof, as suggested

* "Museums, Libraries, and Picture Galleries, &c." John W. Papworth and Wyal Papworth.

by Messrs. Papworth, or a suspended screen, as used at the Exhibition at Rome, would answer the purpose equally well.

The division and arrangement of the pictures have also much to do with the arrangement of the gallery, and consequently with the exterior decoration. In the older Pinacotheca at Munich, the paintings are grouped according to schools, and in this gallery is a most useful arrangement which might well be adopted in other galleries. A corridor runs the whole length of the building, 420 feet, so that whatever particular school you may wish to study you can go to at once, without going all through the rooms.

Another admirable plan is adopted in this gallery, that of setting apart a room close to the entrance devoted to the exhibition of new acquisitions, so that the crowding to see the last new arrival does not annoy those who are enjoying the older pictures.

This building contains grand staircase, entrance saloon, room for new acquisitions, curator's room, and copying room. The ground floor is set apart for engravings, terra cotta vases and mosaics, and porcelain enamels; these are mostly very beautiful copies by Munich artists of the pictures in the gallery.

The picture galleries upstairs are appropriated to the different schools of the old masters, in the following manner:—Italian, three large rooms, one of them 93 feet long, three cabinets opening out of them, lighted, by side windows; ancient German school, one large room and three cabinets; old Flemish school, one large room and three cabinets; more recent Flemish school, three large rooms, and showing how well the mode most suited to a particular size and school is applied; ten cabinets are devoted to the small and minutely finished pictures of this school. The French and Spanish share together one large room and three small cabinets.

Such are some of the leading features in the arrangements of some principal galleries in Europe, that stand for our models and as tests of the success of any particular principle that their promoters may have thought best to attain the end they had in view. The different architectural treatment depends much on which of these modes, both of lighting and arrangement of pictures is selected. If the mode of lighting selected be that used at Berlin and Vienna—that of lateral lighting—the windows become the principal objects in the composition, as is usually the case in our modern buildings, to whatever purpose they may be devoted; and a picture gallery then does not necessarily differ in external appearance from any other ordinary public building. If the mode selected be that of our National Gallery, that is, of lighting from above, the building has naturally to be treated in a way different from all ordinary buildings in northern countries, but gains this advantage if properly treated, that it can scarcely fail of telling everybody its special purpose.

But if the mode to be seen at Munich and Dresden of lighting, and of dividing the pictures into large and small, and placing them in rooms lighted respectively from above and from the side, be adopted, then the modes of treatment which the architect has at his disposal depends, at least, upon three circumstances:—

1. The number of the small pictures.
2. The point of the compass which is thought best or the lateral lights or windows to face.
3. The nature of the site, and the choice of the architect as to whether he will have in his principal front the usual ornamentation of windows, or the peculiar effect in our country associated with picture galleries of some kind of wall decoration.

For, in the first case, suppose that the smaller pictures are so numerous that cabinets lighted by lateral lights are necessary on both sides of the building, then the external treatment becomes the same as if the lateral system of light was alone adopted. But if the number of small pictures is only such as to need the small laterally lighted cabinets on one side, then the architect has two sides that must be treated differently, but which side he would select for decoration by the fenestration, or which for some kind of wall decoration, would depend on circumstances. In the older Pinacotheca this is determined by a northern light being chosen for the windows of the cabinets. This has been chosen for the principal front, which is, therefore, an ordinary looking building, which might be, from its appearance, almost anything else as well as a picture gallery.

But the third, that of the circumstance of site, will necessarily much affect the decoration of these double lighted galleries. If in a position like that of our National Gallery and many buildings in London and other large cities, one side of the building is so closed in by houses that all hope of a good lateral light is impossible; the principal and only façade looking into an open space must, in such a case, be the one lighted by windows, and its decoration, as usual, influenced by them, so that really we get out of the three modes of lighting—1. That of lighting from above alone. 2. That of lighting from the side alone. And 3. That of combining in the same building the two principles for different kinds of pictures, but two modes of treatment for the exterior of these buildings, one peculiar to these buildings alone, and the other not. The third, that of a building having two principal façades, telling on one side that behind its wall are large pictures which it is considered by its architect are best seen by a top light, and the other that the same building contains smaller pictures displayed by a lateral light, is an exceptional case not often met with. And existing examples prove this; for of two of the buildings which combine these two modes of lighting, the two Pinacothecas, at Munich; in one—the older Pinacotheca—the cabinet or window side of the building is the principal façade; and in the other—the new Pinacotheca—the large room or blank wall side has been selected as the grand front, and is appropriately adorned by a series of frescoes by Kaulbach. Certainly the new Pinacotheca is by far the

most striking building of the two, and bears on its walls much more clearly the purpose which the interior fulfils.

With regard to the external architectural treatment, after the mode of lighting and arrangement has been well considered and decided upon. Let us take the case of a picture gallery in which the system of lighting from above has been selected, as it gives by far more scope for treating the building in a way different in manner to most ordinary buildings; and, of course, whatever applies to this case applies equally to the case where the blank side of a twofold lighted gallery is chosen for the principal front. The first thought of an architect, is, what a splendid opportunity is here offered for an unusual display of both sculpture and painting! But, alas, our climate! and the fading nature of the most enduring frescoes! He remembers this, and asks, why in old times the Early Christians could afford to have their basilicas covered with pictures in mosaics; why St. Mark's at Venice is covered within and without with this beautiful, artistic, and everlasting ornament; while we have not a single specimen of such appropriate out-door ornament in all our costly buildings. If the ancient kind of mosaic is so costly, is there no invention that the manufacturers of pottery, enterprising and ingenious as they are, can think of, possessing the durability of the old mosaics, with, at least, some of their delicacy and beauty? Such a mode of out-door adornment for tympanums of arches and other wall spaces seems to be a desideratum.

The subjects chosen and the principle adopted in the new gallery at Dresden will show what scope there is in the associations naturally suggested by its contents for the artistic ornamentation of a picture gallery with first-rate sculpture; we find among the series of statues and bas-reliefs are Hercules, Perseus, Jason and Theseus, Prometheus and Pygmalion, Orpheus and Amphion, Homer and Hesiod, Apelles and Phidias, Lysippus and Alexander. On another front the Patriarchs and Prophets of the old covenant, and the Apostles and Evangelists of the new, with the artists who have so nobly depicted them, Michel Angelo and Raffaele; while on another part of the same front are the statues of Holbein, Giotto, Dante, Goethe, &c., &c. This is truly a good example, and the country that produces such a building will, besides the building, long reap the benefit of it, for a work containing such a mass of figure sculpture, is one of the best schools of art that a country can have, and is not, in this way, the purpose and design of the building written most forcibly on its walls?

The exterior of Sir Robert Peel's picture gallery at Drayton Manor, designed by Mr. Sidney Smirke, is a good example of the artistic treatment of the exterior of a picture gallery lighted from above, its exterior is embellished with colossal statues of Rubens, Vandyke, Sir Joshua Reynolds, and Sir Thomas Lawrence.

A picture gallery without windows at the sides can be made unusually beautiful, but this can only be the case when a totally different mode of treatment is adopted from what would be the case if it was lighted by windows; a great variety of modes is open to the designer,—coloured materials, painting, mosaics, sculptured bas-reliefs, niches expressly formed for and filled by statues, chosen appropriately for the occasion; any means of ornamenting, in fact, that the architect likes, except "blank windows." R. D.

THE BUILDERS' BALL.

AS briefly intimated in our last, the annual ball in aid of the funds of the Builders' Benevolent Institution, took place at Willis's Rooms on Thursday, the 20th inst., under the patronage of the Right Hon. the Lord Mayor, who was present, attended by Mr. Sheriff Cockerell and Mr. Sheriff Twentymann. Many influential contractors were present, and the Rooms were crowded for the greater part of the evening. We believe that an addition of something like £120 to the funds of the Institution is one of the results of these annual gatherings.

MANCHESTER ARCHITECTURAL ASSOCIATION.

AN ordinary meeting of this Association was held on the evening of Wednesday, February 19th, at the Rooms, George-street, the Vice-President in the chair.

After going through the minutes of the previous meeting the Chairman called upon Mr. Alfred Darbyshire to read a paper on the subject of Irish Antiquities, being the result of a recent tour through that country.

In speaking of the present state of the Irish metropolis, the writer called attention to the violations of æsthetic principles displayed in many of the public buildings and monuments, but at the same time referred to the number and extent of the public squares, and to the breadth of the streets as points worthy of emulation in other cities.

After describing the various antiquities of Killarney and county Wicklow, Mr. Darbyshire concluded by giving a detailed account of the famous round tower and seven churches of Glendalough.

The paper was illustrated with diagrams and sketches. A discussion followed upon that *quæstio vexata* of antiquarians, the round towers and their original use.

THE COLSTON HALL COMPETITION.

WE have received several communications, couched in no measured terms, with reference to this competition. There seems to be a very general opinion that the whole of the drawings submitted should be publicly exhibited; the Committee would do well to accede to this desire, if only in their own justification.

THE IMPROVEMENT OF THE EXHIBITION APPROACHES.

ON Tuesday Mr. Cowper moved for leave to bring in a Bill to authorise the formation of a road between Kensington-gore and Bayswater, and to apply the proceeds of the Metropolis Improvement Fund Account towards defraying the cost of the construction of such road. He said that it was with considerable reluctance he moved the House to entertain this Bill, not merely because it was always unpleasant to deal with questions of taste in Parliament, nor because the question was mixed up with parochial and metropolitan jealousies, but chiefly because the office he had the honour to hold for one of its special objects the guardianship of the beauty and amenity of the parks, and it was his desire to protect the parks as much as possible from any such intrusions as would diminish the recreation and enjoyment which they afforded to her Majesty's subjects. A very strong case, however, had been made out against the existing state of things. For the last two years deputations had waited upon him to represent the urgent necessity of a new road between Kensington-gore and Bayswater, not merely with regard to the special requirements of this year, arising from the Great Exhibition, but with reference to the permanent wants of the west of London. The situation of the South Kensington Museum, the Horticultural Gardens, and the Great Exhibition, part of which building would be permanent, under the care of the Society of Arts, made it very important that a good road should be formed between the points he had named. On the other hand, it was very necessary that the parks should be preserved for the enjoyment of the public, and that no detriment should be caused to their appearance. In reply to a statement made that the road would not be ready for the Exhibition, he must say that he had consulted engineers of eminence, and that they assured him a permanent road could be constructed before the first of June, at which time the general resort to the Exhibition might be expected to commence. A contractor had proposed to construct it within three months on the penalty of receiving no pay should he fail in his engagement. Had the Bill been received with favour, and allowed to pass rapidly through the House, he would have had it ready at the 1st of June, but he found that a strong desire existed to retard it. In consequence of this feeling he had taken care to insert in the Bill powers to make a temporary road, but he wished, as the matter had gone so far, to ascertain the opinion of the House as to whether there should or not be a permanent road. Subsequently, Mr. Cowper said, with regard to observations that had fallen from the member for Marylebone, that he (Mr. Cowper) felt himself in the position of the camel whose back was broken by the last feather, for he at least expected that he should have received the support of Marylebone. Then, with regard to what had fallen from the noble lord opposite (Lord J. Manners), he begged to remind him that he was within his province in proposing a measure relating to the Royal property, and the Metropolitan Board of Works had no jurisdiction in the matter.—(Hear, hear.) He had received a vote of thanks from that body for having introduced this Bill. Seeing that the Metropolitan Board of Works and the members representing the metropolis differed in their views, and that the Bill seemed to be generally distasteful to the House—(cheers)—he felt he could not do better than withdraw the Bill.—(Cheers.) He should follow out the other branch of the subject, namely, the arrangement to be made for the temporary passage of vehicles, by proposing an estimate for the sum that would be necessary for that purpose.—(Hear, hear.)

The Bill was then withdrawn.

We have been requested to publish the following Report of the Thoroughfares' Improvement Committee:—

To the Vestry of Kensington.

Your Committee, in again reporting on the important subject of the improvement of the public thoroughfares connected with this parish, especially in relation to the requirements of the forthcoming Exhibition of 1862, deem it advisable to refer to the whole of their proceedings.

With respect to the Brompton-road improvement, a plan was submitted purporting to come from the Committee of Council on Education, showing an improvement to this thoroughfare by taking down certain houses and buildings, from Nos. 11, both inclusive, in the Brompton-road, interfering with the parochial schools, and taking down the houses in Queen's-buildings, between Queen's-gardens and New-street, taking down the chemist's and stationer's shops at the corner of Cheval-place, taking down Brunswick-place, and the lodge to the Oratory, besides interfering with the pleasure gardens of Brompton-square and Brompton churchyard; this comprehensive plan would have cost at least £50,000.

Your Committee being desirous of ascertaining the intentions of the Council on Education, as to raising funds for this object, and with a view to putting the proposed plan to a practicable test, directed your clerk to open a correspondence with the Committee of Council on the subject. A letter, dated the 24th October, 1861, was accordingly addressed to the Committee, and to it a reply was received simply stating that the matter would be submitted to their Lordships. After some time had elapsed, a second letter was addressed to the Committee by your clerk, to which a reply was returned to the effect that their Lordships had not up to that time arrived at any decision.

Your Committee, failing to ascertain how the Committee of Council on Education propose to carry out the scheme set forth in the plan proposed in their office, or whether they would make any contribution in aid of the proposed improvement, considered it advisable to address a letter to the Royal Commissioners for the International Exhibition of 1862, which they accordingly did; the letter was dated the 3rd December, 1861, and forwarded, with a copy of the correspondence with the Council on Education, but to the letter no reply of any kind has been received.

Your Committee having entirely failed to obtain the co-operation of the two public bodies most interested in improving the thoroughfares of Brompton, and upon a plan being prepared by Mr. James Broadbridge, your surveyor, showing a comparatively inexpensive way of improving the width of the road by taking off a part of the land in Queen's-buildings, not built upon, and 20 or 25 feet in width of the apparent waste land in front of Brompton-row, also the open space in the front of Michael's-place, now only enclosed by railings, directed that officer to place himself in communication with the owners and lessees of the property in question to ascertain how far they would be willing to meet the public requirements; that officer reported that he had seen the owners, solicitors, surveyors, and others concerned for the property, and, after considerable trouble, he found that the amount of compensation required in taking it as a whole is far beyond the limited fund at the disposal of the vestry; he was, therefore, unable to negotiate for the land in question, or advise the vestry as to what course they should adopt without obtaining a special Act of Parliament

for that purpose, and for the reason before set forth, it could hardly be expected that the vestry would consider it within their province to adopt such a course.

Your Committee would here remark that this road, the improvement of which is so important to the public safety and convenience during the forthcoming Exhibition, is a turnpike-road entirely under the control of the Metropolis Roads Commissioners, the vestry only having the care of the footpaths on either side. It appearing that the said Turnpike Roads Commissioners have powers under their Act to widen and improve the roads under their jurisdiction, it was to be hoped that they would come forward and invite the assistance of the other public bodies to aid in carrying out so important an improvement.

Your Committee consider the parish of Kensington has shown itself quite disposed to assist in a practicable and reasonable way in the improvement of the Brompton-road, but has also felt itself quite uncalculated upon to carry out, single-handed especially, as the parish of Kensington is by no means the only or the most largely interested body in the matter; the Metropolitan Board of Works, the Turnpike Roads Commissioners, the Committee of Council on Education, the Exhibition Commissioners, and the Royal Horticultural Society are all directly concerned, and whenever so large and expensive an improvement is carried out it must be by a general and fair arrangement among all the parties that will eventually benefit from it—turnpike roads.

A deputation of your Committee waited upon the Metropolis Roads Commissioners on 31st January, and by way of trial ventured to suggest that probably the vestry would be willing to contribute an annual sum of £3,000 in consideration of the Commissioners removing the turnpike gates and side bars throughout the parish of Kensington, and although this sum is admitted not to be sufficient for the repairs of the whole of the turnpike roads within the parish, it is to be recollected the Commissioners are now collecting more money at the gates in Kensington parish than is absolutely required for keeping the roads in repair in these trusts, that a very large and expensive road running through the rich parish of Paddington, and also the Great Western road running through the parishes of St. Margaret, Westminster, and St. George, Hanover-square, are now kept in repair without any charges to those parishes by the sums collected at the gates in Kensington parish, and those beyond.

Upon the proposition being submitted to the Commissioners by the Chairman of your Committee, the deputation was invited to submit the heads of a Bill to Parliament for the consideration of the Commissioners, embodying the said proposition. In accordance with the request of the Commissioners your Committee have directed your clerk to prepare draft heads of said Bill and append the same to this report.

Your Committee's attention having been called to Palace-gardens, which is a private road leading from the Uxbridge-road to the Great Western-road, and not allowed to be used in common for cabs and other public conveyances, consider that the opening of this road during the time the International Exhibition of 1862 shall continue, will assist in affording considerable accommodation to the public generally, and with this view your clerk, under four directions, has communicated with the office of her Majesty's Woods and Forests on the subject to see if any and what arrangement can be arrived at for that purpose.

HOUSE OF COMMONS.
THE NATIONAL GALLERY.

LORD ELCHO asked the Chief Commissioner of Works whether there was any truth in the report that plans for a new National Gallery, to be erected on the Burlington-house site, had been prepared, and that a vote for its erection was to be proposed to Parliament in the present session; whether, in the event of such being the intentions of Government, the plans and elevation of the proposed building would be exhibited before any vote was proposed to Parliament; and whether any decision had been come to as to the purpose to which the present National Gallery was to be devoted.

Mr. COWPER said that the enlargement of the National Gallery in Trafalgar-square had enabled the trustees to receive within the existing building the Turner Gallery, in strict fulfilment of the bequest of the late Mr. Turner. The buildings in Trafalgar-square were now so full that some arrangement must shortly be made to give increased accommodation to the national pictures. The subject had, of course, been very much under the attention of his department, and all possible means of accommodating those paintings had been considered, but at present the Government were unable to come to any decision whatever in the matter. In reply to Lord ELCHO, who asked whether, in the event of any decision being come to, the plans would be laid on the table of the House before any steps were taken towards carrying them into execution, Mr. COWPER said, that forms part of the subject on which the Government have not yet come to a decision.

LEICESTER-SQUARE.

In answer to a question by Sir W. JOLIFFE as to whether there was any prospect of an improvement being effected in Leicester-square,

Mr. COWPER admitted that that locality was the stigma and opprobrium of London; but he was not able to give a satisfactory account of the origin of the present state of things. It appeared that there was some doubt as to the legal estate in the soil of Leicester-square; and all parties concerned in the ownership of the square agreed that they would allow what they were told would be a temporary and ornamental building to be erected in the centre of it. That building had certainly not justified their expectation with regard to its being an ornament, and it was likely also to deceive them on the point of its permanency. He certainly should be glad if there were any power which could be exercised on behalf of the Crown to put an end to that state of things, but he was not advised that it was so. At the present moment he was unable to hold out any prospect of the termination of the very unsatisfactory and disgraceful state of the square. He could only say that if he saw any way to make Leicester-square as ornamental as the other squares of the metropolis he should be glad to adopt it. He should think that the last thing any one could wish to see would be the squares of London built upon. He should rather think that the owners of squares would follow the example of the benchers of the Temple, and throw open the grounds, giving the public every facility to enjoy themselves in them.

VERSAILLES.—M. de Saint-Marsault, Prefect of the Seine et Oise, has just had posted up in Paris notice of a competition for the construction of an hôtel de ville and a gendarmery barrack at Versailles. Four prizes of 3,500fr., 2,000 fr., 1,500fr., and 1,000fr., accompanied by a gold medal, will be awarded to the four best plans; the fifth will receive a gold medal only.

ROYAL COMMISSION TO INQUIRE AS TO THE HEALTH AND SAFETY OF MINERS.—The Queen has been pleased to appoint the Right Hon. Lord Kinnaird, K.T., the Hon. Fulke Egerton, Nicholas Kendall, Esq., Henry Austri Bruce, Esq., John St. Aubyn, Esq., John Davie Ferguson Davie, Esq., Edward Headlam Greenhow, M.D., and Philip Henry Holland, Esq., to be Her Majesty's Commissioners to inquire into the condition of all mines in Great Britain to which the provisions of the Act 23 and 24 Vict., c. 151, do not apply with reference to the health and safety of persons employed in such mines.

THE REMOVAL OF THE MUSEUM COLLECTIONS TO SOUTH KENSINGTON.*

THE principle of exhibition, adverted to in our last, is by typical arrangement. In the Zoological Department this implies a selection of such specimens as may be sufficient to illustrate the main points of interest found in connection with particular groups of animals. There would be an outline of the classification of the animal kingdom, giving such a display of the more prominent divisions of form and colour as would be calculated to strike the casual spectator.

This limited exhibition is the only one that can be of real service to the mass of the people, who can take a holiday only by the sacrifice of a day's earnings. We should be glad, indeed, to hail any prospect, however distant, of the number of public holidays being increased. Philanthropy would find an ample field for its labours in this direction; and the man who should be fortunate enough to originate any plan for adding to the opportunities of harmless recreation within reach of the working classes, would be worthily regarded as an eminent public benefactor. If we are sincerely anxious to benefit the people, we should endeavour to place before them, as compactly as possible, what we have to show, and, moreover, bring the exhibition within the compass of a not too fatiguing day's work.

If the Trustees would authorise the Keeper of Zoology to arrange the Bird Gallery on the typical plan by way of experiment, the public would then be able to judge of the effect. The better to exemplify what is meant by "typical" arrangement, we may take the family of Corvidæ. Thus, as types of species within this group, we should have a crow, a rook, a jackdaw, and a raven, without attempting to represent by mounted specimens all the crows, all the rooks, all the jackdaws, and all the ravens in the world. These, and analogous varieties of other birds, would, nevertheless, be carefully preserved, unmounted and stowed away in drawers, to be forthcoming (under proper restrictions) at the demand of the scientific student. Naturalists prefer to have an unmounted specimen to handle and examine, and themselves keep their own collections in drawers glazed at the top. Constant exposure to light is found to be most injurious to the bright colouring of birds' plumage, and peculiarly ruinous to the delicate tints of shells and insects. In fact, all objects are affected more or less, save only the birds above alluded to, which remain black for ever. Our present system ruins objects by exposure, and calls for perpetual expense to supply the place of worn-out and defective specimen.

Out of 2,000 genera of birds, in many of which the differences are so trifling as to be detected by the eye of the naturalist alone, Professor Huxley considers that a large allowance would be made if he selected 1,500 species as types. Not only would these 1,500 species give the ordinary visitor a very full idea of the varied forms of birds, but they would enable any one who had made himself acquainted with them to say at once, on seeing any bird, where its allies might be found, and to what family it belonged. The arrangement would be as follows:—The wall cases would be allowed to stand, but the other objects which cover the floor would be cleared out, and in their place would be two lines of glass cases, leaving 10 feet clear for each of the three passage-ways. Above the wall cases would run a gallery fitted up with store cases and drawers, and at intervals there would be doors communicating with rooms used as studies.

It is well known that, at present, the Museum is really accessible to scientific persons only on alternate days; but, by separating the great mass of the specimens as a scientific collection, which the public would not care to see, and need know nothing of, that collection would be always available to students, while the general or typical collection could be always open to the public. Some idea may be formed of the vast space afforded by the present wall cases in the bird gallery, when it is stated that it is equal to the area allowed for the exhibition of the whole of the British fossils in Jermyn-street.

Within the walls of this gallery all the known birds could be so arranged as to form a most fascinating exhibition to the general public, and this room would, by the adoption of the typical plan, be amply sufficient to hold all additions for the next hundred years.

We have dwelt at some length on the Natural History Department, because collections within this section of the Museum are under sentence of transportation, and because visitors are known to take a greater interest in these than in others, for a proper appreciation of which some special knowledge and education are required. We have gone into detail because we deem it most important to decide whether we shall go on spreading out collections to an indefinite extent, or whether we shall be content with giving a general idea of natural forms, reserving in store for the use of studious and curious persons more minute and extended representations. If the resolution of the Trustees be carried into effect, a very small space will be set free, not amounting, in fact, to 13,000 feet. This proposition of sending away mineralogy and geology is a mere makeshift. It will do nothing towards relieving the pressure of the accumulations on the space within the Museum. For this reason we can but regard the transfer as a simple do-nothing, or (what we have already hinted) as another item in the scheme for the aggrandisement of South Kensington.

The ruling idea which has long guided the heads of departments has been that of obtaining and exhibiting everything. It is to this comprehensive notion that the deadlock to which we have now come is mainly due. In the Department of Antiquities, no less than in the Natural History Collections, we should advocate—at least for the future—limited exhibition. Let any observant person enter the galleries devoted to antiquities, and watch the effect produced on the majority of visitors, and we are much

mistaken if he will not find it to be listlessness and weariness. After all, is this to be wondered at? An untaught man is unable to see anything worth looking at in a torso, or other ruined sculpture; and even those of us who happen to take mere interest in these things, from education or natural bent, cannot affect to deny that the antiquities in the Museum are, for the most part, not objects of high art, although they possess great value as expressions of human civilisation and religious feeling from the most remote ages and in various countries.

There, perhaps, was never a period in which fewer independent opinions were formed than at the present day. The luxuriance of the press saves men from the trouble of thinking, if our systems of education have attempted, in the slightest degree, to teach them that their first care should be to cultivate the faculty of thought. We must be content to take human nature as we find it, and one of its most conspicuous qualities is readiness to cast about for a faith, a policy, a leader. It devolves on us, then, to show the mass what they ought to admire by placing it before them; and thus our collection of antiquities may be made ancillary to the education of the people, by imbuing them with a taste for beauty of form. Indiscriminate touring through rooms filled with unintelligible sculpture will teach a man as much, or as little, as a book written in an unknown character. Archæological remains, however interesting and however widely displayed, bear no comparison at all to a well-chosen exhibition of the highest art in a few rooms. It is concentration of merit at which we should aim. While fully recognising the desirability of arranging the antiquities in chronological sequence, we should, in the interests of the public, ask for one room or hall devoted to great masterpieces of art. Let us have in London a match for the Tribune of the Uffizi Gallery, if all chance of getting a Braccio Nuovo is hopeless.

Although, as we have said, we should be glad to see a chronological arrangement of works of art, we do not lay so much stress on its necessity as some. The anomalies which exist in the present disposition of the saloons are of little practical importance in the eye of the scholar, and tend but slightly to confuse his judgment. If the nation were called upon to erect a building that should contain the present collections, no other arrangement than one in order of time should be adopted; but, as a vast assortment of sculpture—much of it of gigantic size—is *in situ*, some regard must be had to economy. The few facts elicited in one instance of contemplated removal are not encouraging. The head of Thothmes III. was proposed to be moved a few feet from its present position, and the estimated cost was set down at £70. The Trustees did not feel justified in sanctioning this entail, and the head still stands in the gangway at the end of the great gallery. The circumstances of this case are described as altogether special, for the monument is a block of granite weighing six or seven tons; but it is obvious that the removal of many of the largest objects in the Museum, which would be necessary to obtain a strict chronological sequence, could be accomplished only at great cost and probable risk of injury.

We cannot now do more than touch briefly on some of the more prominent points connected with the plethoric state of the British Museum. We shall gladly witness the clearing away of the glass sheds that now mangle the fine portico, but their presence reminds us of a cardinal rule of conduct that should guide the Trustees for the future. Rejoiced as we are at knowing that this country possesses the sculptures of the famed Mausoleum, we are fully certain that great discretion should be observed in the display of these marbles. Many—unhappily, too many—are in mutilated fragments, and we can only repeat to Mr. Newton what we have already said in dealing with Professor Owen's section, that the Museum cannot find space for that liberal exhibition which he evidently contemplates. Many broken pieces were sent home from Halicarnassus and Cnidus to see whether they could be made to fit one another, and, consequently, there is not the least necessity for their being exhibited. If these fragments are preserved in some part of the building, they need not be in the public portion, as they will be interesting only to the antiquarian. Let them be in the basement, where they will be accessible to those who wish to see them. That the finest and best preserved of these marbles may most worthily find a place among our collections we unaffectedly believe. All we ask is that sound judgment be exercised before we stand committed to an extensive range of rooms whose contents will present few points of attraction to general visitors. It is manifest that a comparatively limited space is required to store sculptures for purposes of artistic reference, and we dare challenge contradiction to the statement that the public will be in no way benefited by the construction of huge and lofty galleries with ample thoroughfares projected for the admission and circulation of holiday crowds. Far before the merits of this or that plan of enlargement or arrangement stands, as we conceive, the principle on which we shall proceed in adding to the Museum.

Considerable diversity of opinion would, probably, be found as to the point at which excavations of ruined cities should cease. If no limit is placed on archæological researches; if the nation is prepared to pay for the disinterment of sculptured fragments, illustrative of every chapter of ancient history, every fresh extension of the Museum will still prove insufficient. It is clear that, postpone it as we will, the day will come when the State will be constrained to cry "enough." For ourselves, we are strongly disposed to think that the time has even now arrived when a stop should be put to these explorations, at least so far as they compel the necessity of finding exhibition space for their results. The success which has attended the mission of Mr. Newton very naturally induces him to look forward to accessions from Asia Minor and the Archipelago, and from Cyrenaica; but will that gentleman, or any one, point out the corresponding advantage to be gained in return for a great outlay which will

* Concluded from page 102.

entail still further and further enlargement of the Museum? In some quarters we shall be thought guilty of downright heresy when we assert that the multiplication of fragmentary sculpture—belonging not to the best periods of art—is of no real use even as a study. Is it not the fact that these works are brought together from the four winds of heaven with no view as to their actual artistic value, but rather to justify the use of high-sounding terms, such as “the history of the art-emanations of the human mind throughout all time?” The history of the human mind! what cruel gaps occur! How much is left to conjecture! Rich as we are in Egyptian remains, how faint is the idea we can gather from them alone of the character of Egyptian art. Colossal and perdurable are its features, we see; but to realise its stature and to trace its descent is granted to those only who can gaze on its embodiment in the land of its birth and in the complete grandeur of its types at Memphis and at Thebes, in the Pyramids and in the mighty temple of El Karnak.

If our Government could take a more direct interest in art, or had power to encourage, by grants of money, the publication of works illustrative of ancient remains, every purpose would be served, and the nation would not be called upon to provide buildings for vast collections, and to pay an additional staff of attendants to dust and keep them in order. Of course, we ought to lose no opportunity of obtaining fine sculptures. All we say is, that when sculptures are much broken and defaced, and do not belong to a good era of art, we should be satisfied with carefully drawn representations of them, and indifferent to the possession of *ipsissima corpora*. With such facilities as we can command by the aid of photography we might, at a small proportionate cost, amass a most faithful and valuable series of illustrations, while we reserved ourselves for the purchase and conveyance of works produced in the best periods.

The Museum has so completely outgrown all previously conceived ideas of its originators, that the very purpose of its foundation is now matter of dispute. Naturalists assume that it was founded as a Natural History Collection, but Mr. Panizzi contends that the very name given to the chief officer—namely, Principal Librarian—shows that the Act of Parliament which called the Museum into being considered books, and not natural history, as the main feature of the institution. The account of its origin is this. Sir Hans Sloane left his collections to be offered to the nation for £20,000, with contingent provisions in case of refusal. Parliament, in 1753, voted that sum, and by the same Act bought also the Harleian manuscripts. By uniting these purchases with the Cotton collection of manuscripts, which had long been the property of the nation, the British Museum was established. Whatever might have been the original destination of the Museum, its triple union of literature, science, and art makes all classes join in the wish to retain it intact in its present position. Indeed, it would be difficult to over-estimate the value of that connection, or the convenience afforded to persons devoted to science and art of meeting round a common centre—our magnificent national library.

Among the objections to the removal of the Natural History Collections not the least is the formation of a special library, which, the Committee state in their report, would cost £30,000 at the present time, while the daily increase in the literature of natural history will necessitate further expenditure, from time to time, on works which frequently contain costly illustrations. Is the country prepared to incur the burden of supporting two immense establishments, with all the concomitant cost of attendants and buildings? We have yet confidence in the independent members of the House of Commons that they will not allow this monstrous job to be perpetrated. The scheme of removing the National Gallery to the same favoured locality met with a signal defeat. We observe that Lord Elcho—to whom we are chiefly indebted for the retention of the pictures in the centre of London—intends to move that one of the Ministers of the Crown shall be held responsible for the estimates voted for all public institutions. That something must be done is clear. Indeed, nothing but this coquetting with South Kensington has prevented the question from being settled in the only rational and sensible manner. As the land which surrounds the British Museum happens to belong to one proprietor, there can be no difficulty in coming to terms with him. The wisest plan would be to purchase the whole at once, and make use of it as occasion requires, not (as we have endeavoured to show) in a wild, prodigal style, which will reopen for our descendants the question which ought now to be set at rest for ever; but with forecast and judgment, proceeding with the fixed determination to perfect one of the grandest schemes which it has ever fallen to the lot of any nation to apply, and to complete a building, the contents of which shall be the wonder and delight of the people, and the cynosure of all who are devoted to art, science, and letters.

COMMITTEE ON FIRES.—A select committee to report upon the subject of fires in the metropolis has been nominated. It includes Mr. Hankey, Mr. Cowper, Mr. Locke, Mr. Cave, Mr. H. B. Sheridan, Mr. Cubitt, Mr. Lewis, Mr. Peacock, Sir J. Paxton, Mr. Benyon, Mr. Alderman Salomons, Mr. Tite, Mr. W. Miller, Mr. Vance, and Mr. G. Clive, with power to send for persons, papers, and records.

THE LONDON CO-OPERATIVE OIL AND COLOUR COMPANY.—Mr. Thompson, the appointed manager of the works of this proposed society writes, with reference to a notice of the Company which appeared in our Number of the 14th instant, that the company really deserves “the support of architects, who, as a class, are noted for share transactions.” However that may be, it is very rarely that we can take it upon ourselves to “recommend” our readers to take shares in any company. The dividend promised is, we observe 100 per cent., and the address of the manager, 8, Colet-place, Commercial-road.

GASWORKS AT CHERTSEY.—The Chertsey Gas Consumers Company offer £10 for the best plan and specification submitted to them for works to make and 2,000,000 cubic feet of gas per annum.—*Engineer.*

PROFESSOR SMIRKE'S LECTURES ON ARCHITECTURE AT THE ROYAL ACADEMY.—LECTURE V.

LAST week I addressed to you some remarks on the subject of form as it affects design in exterior architecture. I propose now to submit to you the result of my experience and reflections on design in interior architecture. These two subjects, as I then stated, readily admit of separate consideration, and, indeed, almost demand it; for the aims, as well as the means, of the designer in each case are widely different.

In determining the external features of a building we have to consider, besides the character of the building itself, various collateral circumstances—such as the nature of the site, the character of the surrounding scenery, or of the adjacent architecture. It is far otherwise with internal architecture; there, we may disregard all these collateral circumstances, and limit our attention to the individual character of our subject.

In designing the interior of a building, however, there arises a new and peculiar source of difficulty. Considerations of convenience come in to embarrass our pencil and to complicate our task; architectural effect and fitness of arrangement will often militate most inopportunistically against each other. We must needs have a door, perhaps, where we would fain have had solid masonry; and light, perhaps, can only be obtained from the east, whilst æsthetic considerations may point to the west as preferable. In fact, to reconcile these two important, yet, often incongruous objects, forms one of the severest trials of an architect's skill and patience. The art of conveniently arranging the various parts of a plan, so as to fully adapt them to their special purpose, is truly one of primary importance. It is, indeed, obvious that all our labour and art may be wastefully expended if our plan be not such as to afford a convenient collection of its several parts. To lay down a good plan, therefore, becomes the first duty of an architect, and demands his first and most earnest attention. The subject of a convenient arrangement of a plan cannot be entered upon with propriety here. I will, therefore, on this point confine myself to the general observation that simplicity and directness are cardinal virtues in all architectural arrangements. Avenues should be as straight, as short, and as obvious in their course as possible. The rules for the moral conduct of a man seem very applicable to this branch of our art; his ways should be clear and obvious, they should be free from ambiguity and uncertainty, without tortuous or dark places. The right way is always the straightforward way; but, when a turn is necessary, let it be one that cannot be mistaken.

The first impression on entering a building should be such as is becoming its special purpose, and, if possible, suggestive of it. The temenos of a Greek temple was well calculated to give an impressive air of sanctity to the temple itself, by excluding from view all incongruous objects. A similar feeling, perhaps, led the architects of early Christendom to form that peculiar fore-court, or atrium in front of the naos, of which a few examples still remain. The Basilicas of San Ambrogio at Milan, and of S. Clemente at Rome, are interesting examples. There can be little doubt that the builders of that devoted age were influenced by subjective considerations of this kind, although the ritual appropriation of this portion of the building was to receive the catechumens of the church, and to afford a suitable place where the candidates for baptism might present themselves. At all events, a very powerful effect must have been produced upon the eye and mind by thus shutting off from view the outer world, and concentrating attention on the sacred structure about to be entered.

It was, perhaps, a similar motive, a legitimate artifice for the purpose of strongly impressing the mind of the worshipper, that led our old church builders usually to form their doorways of very moderate dimensions. Great emphasis was ordinarily given to the western, and often to the lateral doorways, by exterior decoration, but the actual opening of the doorway is usually comparatively unobtrusive. The natural effect of this is to produce a surprise at entering, and so affecting the mind with awe.

Turning now to domestic architecture, we shall not fail to recognise the efforts made by the early Italian artists in designing the entrance halls of their noble palazzi, to secure a favourable first impression. Their halls are of large dimensions; treated in a broad and grandiose manner, without much ornament, but usually embellished with ancestral statues and warlike trophies.

This first entrance-hall is, however, sometimes made subordinate to a capacious inner central hall, giving means of communication with all the principal apartments; a happy idea, alike productive of social convenience and architectural effect. Palladio's celebrated Villa Capri is a specimen of eminent skill that has been productive of a host of similar examples, not only in the land of its birth but even in our country, as at Cobham-hall, and other of our princely country mansions.

These inner central halls may, perhaps, be regarded as lineally descended from the interior peristyle of the Romans, which, as we see at Pompeii, formed the ordinary place of family resort, giving access to all the adjacent apartments.

The cloisters of conventual buildings were, apparently, an amplification of the same idea, and derived from the same source. Whatever the phase of art, whatever the mode of treatment, whether arcaded or columnar, or both, these columns afforded occasions for most picturesque and pleasing designs. At those interesting remains of Roman magnificence called the Villa Mecenas, at Tivoli, we have a remarkable instance of the union of the arcade and colonnade, forming a cloistered ambulatory, an arrangement by which we have the greatest possible variety of outline and *chiaroscuro*.

I proceed now to an important feature of almost every structure destined for man's habitation—I mean the staircase. In designing this often very picturesque feature, it must be admitted that we owe little to ancient examples. I am unable to cite any instance of an internal staircase of very striking effect in any classical remains. Magnificent exterior flights no doubt occur, and in Belli's description of the Greek Theatres of Crete we see evidences of the existence of double returning flights, similar to those so common in modern architecture, having each flight enclosed within solid walls. The newel stair was certainly of purely Greek origin. A perfect example exists in good preservation among the ruined temples at Selinuntum; its dimensions, however, are extremely small, the diameter being only 6 feet 4 inches. The domestic architecture of Rome seems to have required little aid from interior stairs, and even in so sumptuous a building as the Coliseum, where 40,000 persons had to be provided with ready access to very high levels—built, too, when Roman power and art were in their zenith, expressly to gratify the extravagant love of display of the Roman people—we still find no very pompous staircase, although, it is true, the stairs are numerous, and, as I mentioned to you two weeks ago, executed with great masonic skill.

Among the buildings that remain of earlier Mediæval art, it is still difficult to point to any very fine staircase.

Highly effective flights of stairs no doubt occur. There are notable examples at Assisi, and at Lucca, where there is a flight of 7 or 8 feet wide, with a marble arcaded balustrade, sufficient to show that the builders were to some extent aware of the fine effects attainable by the artistic treatment of this portion of their plan. Still the examples are rare; I know of none in this country of greater importance than that in the cathedral close at Canterbury.

The newel stair was certainly the most usual form of stairs in buildings, even of most important character, during the middle ages. The example at Dover Castle, known to most of us, is of large dimensions; that at Tamworth Church is, perhaps, unique in this country, as presenting a double spiral stair round one newel. So characteristic is the newel stair of Mediæval architecture, that the partially detached turrets which usually contain them are among the most marked features of the style throughout Europe. Perhaps no city contains more remarkable examples than Nuremberg. Wherever this turreted staircase occurs, it always constitutes a pleasing object, imparting an agreeable variety of outline to the composition.

As peaceful arts advanced [and men ceased to look for security in embattled buildings] the artistic builder soon perceived the opportunities afforded by flights of stairs for pleasing and pictorial effects. Nor could he be insensible to the extreme inconvenience of the Gothic spiral form of staircase, where, whatever the length of the steps, there necessarily can be but one place offering a convenient proportion of the tread to the riser.

In the quiet times of the later Tudors staircases in this country began to assume their proper character, and there is no part of our old Elizabethan mansions on which builder seem to have dwelt with more pleasure, or on which they were more wont to exercise their playful fancy, than the staircase.

But while those fantastic works were in course of erection which we see at Crews Hall, Hatfield, and elsewhere, especially in Germany, the more polished artists of Italy were erecting

staircases of magnificent proportions and bold character, yet of a totally different character, and this is a phenomenon well worthy of observation. At the very time when those rude and rather grotesque works were being executed here, there existed in that land of art, Italy, staircases designed by the great masters, which were consummate models of grace and refinement, like that at S. Giorgio, at Venice, by Palladio.

The genius of each people is well typified in this diversity. Bold, irregular, and unrefined, such were the Elizabethan and Jacobian schools; whilst the works contemporaneously executed by the Italian school were grave, symmetrical, and simple.

I am well aware that the study of this contrast may lead different minds to very different conclusions. The picturesque and quaint exuberance of our own old manner of designing the stairstrading, for example, seems calculated to win the admiration of the painter, while a different feeling may prevail in the colder temperament, which is forced, as it were, on the architect by the very nature of his profession, working, as he does, not on canvas, but in solid masonry. As time advanced the sobriety of manner which distinguished Italian staircases (and, indeed, architecture generally) in the fifteenth and early part of the sixteenth century, gave way, and staircases began to be designed in a capricious, fantastic manner. Excess of freedom, and a wonderful power of construction, led ultimately to the erection of staircases fit rather for the scene-painter than the architect.

Greatness of dimensions, however, was a merit to which all were alive, and we, therefore, find in Italy staircases of a size almost extravagant. The staircase in the Albergo del Poveri, at Genoa, is 115 feet long by 63 feet wide, and that in the Royal Palace at Naples measures no less than 163 feet by 85 feet. The Renaissance school, to which I am more particularly referring, employed two very different types of staircases, each, perhaps, equally susceptible of beauty—one wherein both ends of the steps are supported by solid walls, the other where one end only was let into a wall. As notable and familiar examples of the first, I might refer to the palaces at Versailles, Fontainebleau, and the Louvre, and our own Reform Club. Their form of stairs is capable of great dignity as well as beauty; but it has some inherent inconveniences. The raking solite of each flight is a source of difficulty in design, and gives rise to some unpleasant effects. They are wanting, too, in lightness and freedom, whilst persons ascending and descending do not see each other until they abruptly meet. The staircases of the second type are, on the other hand, far more free and open, and the eye expatiates over the whole area at once. It is almost needless to give examples of this latter familiar form. The elegant work of Palladio, to which I have already adverted, at Venice, and the stupendous example at Naples, will illustrate the type. I might add a third variety, viz., where there is no turn, and the stairs extend in a continuous straight line. The Royal Library at Munich has a staircase on this plan. The Scala Regia, in the Papal Palace at Rome, is another example, presenting an extremely striking architectural scene. The proportions are colossal, and the flight is flanked by a stately colonnade.

The effect of this staircase is artfully heightened by a peculiar expedient. The flanking walls are not parallel, but gradually approach each other, the width at the bottom being 10 feet wider than at top. The object no doubt was, by an optical illusion, to increase the apparent length of this avenue of columns—an architectural fraud, in fact, ingenious, but hardly to be recommended for imitation.

It is, I think, to the second type that I would point as most deserving approval. Schinkel's great work, the Museum at Berlin, is a favourable instance of it; and a still more colossal staircase at the same building has recently been erected by Stüler. Its dimensions are about 140 feet by 70 feet, the walls affording a magnificent field for the frescoes of Kaulbach.

The principal error to avoid in these great open staircases is an appearance of tediousness in mounting. It should never be overlooked that the great—indeed, the only legitimate object of a staircase—is to facilitate our way, up or down; and no display of architecture will reconcile us to any unreasonable amount of indirectness in our course. Those large, straggling, tedious stairs up which we are occasionally compelled to work our way, and which, by following, in their turnings, along all the four sides of the staircase, seem to lead us in any direction rather than that which we desire to take, are at once unsightly and inconvenient. Before I finally quit this subject, I desire to commend to your observation that a simple flight of even a few steps will be found, in the hands of the artist, capable of an agreeable effect. It would be easy to multiply illustrations, but I will confine myself to two or three simple instances derived from that land of art, Italy. At the entrance to the Incurable Hospital at Genoa, some local circumstances compelled the architect to lead us by an indirect line, the public street not being at right angles with the direct line of access to the interior. So far from ignobly submitting to this as an inevitable awkwardness, the architect struggled, successfully, to give an apparent, as he could not give a real, symmetry to his plan, by the picturesque contrivance indicated on the drawing.

To descend to a still humbler illustration, I would adduce an instance occurring at a small, unpretending house at Boulogne. In a straight passage of moderate width it was necessary to rise 4 or 5 feet. The obvious and prosaic course to adopt was to place so many parallel steps across the passage; but such an artificial mode of proceeding would ill accord with the æsthetic views of an Italian artist of the sixteenth or seventeenth centuries. He accordingly broke his flight of ten steps into two flights of five steps, with an intermediate landing, at which landing he introduced two short portions of ornamental balustrade, thus giving these few steps a positively ornamental appearance, and really assisting the person passing by affording an intermediate means of support.

A third example I noted at a convent in Rome. Here Bernini, whose principal aim at all times seemed to be to avoid insipidity at any cost, entailed, it is true, by the arrangement shown on my sketch, a constant source of inconvenience upon all succeeding ages, as long as the stairs may last; but he achieved his great object of avoiding the abhorred simplicity of a straight flight, and produced a pictorial effect with very small means and in small compass.

These few trifling examples are suggestive; they tend to show that a really inventive talent may find occasion to display itself, even in matters of a very insignificant and unobtrusive nature.

I hasten now to enter the apartments towards which we are proceeding. But first let us parley for a few minutes on the corridor that we have to traverse before we enter them.

Good taste, and, indeed, common sense, seems to suggest that the architectural aspect of a passage should be somewhat conformable in style and treatment with the more important object to which it leads, be it church or chamber. The eye and the mind would thus be, as it were, prepared for, and attuned to, the subject upon which it is about to be exercised; care, however, always being taken to keep this passage subordinate and subdued, so that there may be no risk of disappointment. Many modes present themselves of giving architectural effect to this passage: variety of light and shadow is an important means of doing so; we all feel the beautiful effect of this variety in natural scenery, those glimpses of sunshine, those alternations of gloom and cheerful daylight, so charming in a forest scene; and analogous effects are obtainable in our own art. A long passage may be much relieved of its length by a judicious breaking up of the vista with alternations of *chiaroscuro*.

With the same object in view of diverting the attention and relieving the monotony of a long corridor, we may with advantage place some object of interest for the eye to dwell on, such as a picture or a piece of sculpture, at its termination, or at a turn in its course.

The most beautiful passage in the world is probably that which Raffaele executed at the Vatican. Independently of its frescoes, the proportions of its piers and arches give it unspeakable grace; yet, beautiful as it is, the subordination to which I have just adverted has been so well observed, that the stanzes, to which the loggie give admission, lose none of their interest by the contrast. Whilst on the walls and vaulting of the loggie are depicted those graceful arabesques and playful ornaments, the walls of the stanzes, to which it leads, bear some of the grandest masterpieces of the genius of painting.

In the vaulted corridors of the great Flavian amphitheatre we have another remarkable instance of correct judgment. These corridors are strictly consistent in character with the enormous building of which they form a subordinate part; they, in fact, appear to have become not only the type and model on which all other works of a like nature were subsequently erected, but the fertile parent, also, of those beautiful arcades which so frequently court our admiration, both in ancient and modern Italy. These are, it is true, pre-eminent examples which I have cited, and it may be thought that noble works of the highest grade of art offer no available materials for our imitation or study, in fulfilling the humbler tasks that fall to the lot of most of us. It is not so, however: a right principle is applicable alike to great things and small; and I consider that the rule which I have ventured to enunciate—

that in all works of architecture, every passage or ante-room should be conformable in style, yet subordinate in treatment, to the apartment to which it leads—is of universal application. Let us now proceed to those apartments towards which we have been so long advancing.

There are few objects connected with our art that has been more frequently dwelt on by those who have undertaken to be our guides and mentors than the right proportions to be given to a room. Vitruvius led the way, and subsequent theorists have laid down—sometimes very dogmatically—their views of just proportions.

I find, however, in the actual practice of the ablest men such extreme diversity, and I observe pleasing effects producible by the adoption of such widely different proportions, that I confess myself to be somewhat incredulous of all these theories.

Certainly, if beauty could thus be reduced to a formula, and the proper relation indisputably established between the length, breadth, and height of a room, a royal road would, indeed, be cleared for us, most convenient both to those who teach and those who learn. But I cannot hope to furnish you with such a desirable help in your studies. I find rooms of universally admitted beauty, yet of almost every geometrical figure. I have heard the room called the Tribune, in the Museum at Florence, spoken of in terms of rapturous approval for its beautiful form and proportion: this is an equilateral octagon on plan. I have known square rooms greatly admired—for example, the central hall at Cobham is spoken of as the *chef-d'œuvre* of Inigo Jones; this, if I remember rightly, is a cube of 10 feet. This is there that is not charmed with the proportions of the Pantheon at Rome; this, you know, is circular; whilst the Sistine Chapel, upon which all the best art of Italy in its best days was expended, is a triple cube—viz., 133 feet by 44 feet. The truth, I believe to be, that so bountiously have we been endowed, and so liberally have the laws of beauty and proportion been fringed, that there exists, in fact, an endless variety of beautiful forms and proportions.

It is, I think, as little consistent with truth to lay down any one definite proportion as the best, as it is to extol any one particular curve as the line of beauty. Harmony in form is as infinitely various as the harmonies of colour and of sound.

The purpose of a room must always be an important guide in determining the form and proportions of it. The octagon form, for instance, so much affected by our ancestors in planning their chapter-houses, owes its origin, probably, far more to the propriety of that form for a chamber destined for the assembling of the members of the Chapter, sitting in council, than to any intrinsic architectural beauty.

This fitness to its purpose should obviously be among our very first objects of consideration. But it is the diversity of those objects to be kept in view which complicate the task of an architect, and renders it often very difficult.

In a public hall, for example, he has to consider not only its agreeable proportions, but its acoustic properties, its aptness for seeing, its capacities for lighting and ventilation, the most serviceable distribution of its means of ingress and egress, and many other considerations, among all of which he has to attach to each its relative importance, and to determine to what extent one object may give way to another, and where a sacrifice can be made.

Unfortunately for the architect, whilst these conflicting considerations are taxing his judgment, the critic stands by, regardless of all these embarrassments, and tests the beauty of our work by the inflexible rules of the dogmatist on whom he may have happened to pin his faith.

CHATHAM.

IN addition to the extension of this dockyard by the formation of additional docks, basins, &c., the sanction for which was obtained from Parliament during last session, the Lords of the Admiralty have decided on still further improving the dockyard, so as to afford increased facilities for the construction of the iron and other vessels now building at this establishment. This will involve an additional outlay of nearly £50,000, which sum will be applied for during the present year. Of this amount about £20,000 will be expended in improving the dockyard by means of convict labour, the remainder being required for the construction of additional workshops, the erection of new machinery connected with armour-plating the ships building, the enlargement of the second dock, and in other works of improvement. It is also intended to construct five new docks of a capacity larger than any at either of the other royal dockyards, together with three large basins, the largest of which will be upwards of thirty acres in extent. A considerable sum is also to be devoted to deepening the river from Sheerness to Chatham Dockyard, in order to provide a channel-way 600 feet in width, with a depth of 31 feet. The works in connection with the building of the two large batteries at Bishop's Marsh and Folly Point, are steadily progressing. The most formidable difficulties have been encountered at Folly Point, owing to the soft, spongy nature of the soil on which the battery will be placed, and much time has been lost in sinking the foundations, from the frequent slipping and sinking of the substructure, causing the most harassing delays in the prosecution of this portion of the works. The largest of the batteries for the protection of Chatham Dockyard will be that erected on Bishop's Marsh for the security of the passage of the headland of Darnet-ness. Here, again, the greatest difficulties have had to be contended against in consequence of the shifting nature of the soil on which the central foundations of this important line of fortifications are to rest. The diameter of the area required for the battery is about 400 yards, and the necessary excavations had been nearly completed for the reception of the concrete, when the heavy pressure of a spring tide, bearing on the sandy slope of the river face, burst through the wall and inundated the whole excavation. This accident has caused considerable delay in the progress of the work, but the greatest energy has been displayed by the contractors in surmounting the difficulty and repairing the mischief. The intention to erect a fort inside the Garrison-point, on the south side of the dockyard, has, it is understood, been abandoned, as that part of the Channel will be amply defended when the contemplated line of fortifications is completed. It is, however, intended to place a powerful casemated battery on Cheyne Rock, situate about three-quarters of a mile to the eastward of Sheerness dockyard. This fort will be connected with the present defences by a deep fosse capable of being filled whenever required. At each end of the ditch will be erected batteries heavily armed, so as to command the land approaches, as well as to assist in the sea defences. On the opposite shore of the estuary of the Medway the powerful batteries now being erected on the Isle of Grain are progressing. The martello tower, built a few years since on the Spit of Grain at a cost of several thousand pounds, will not be removed, as was originally contemplated when the plan of the proposed new fortifications was decided upon, its position being allowed to determine the relative situation of the other works.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post*. Gold watches 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enables persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

J. W. BENSON, 33 and 34, Ludgate-hill, 46 and 47, Cornhill, London, E.C. Established 1749.

* To be continued.

THE ROYAL ENGINEERS.*

BUT little need is there, unfortunately, for "an Officer" to ask if the numerous commissions and committees, that within the last few years have been appointed to inquire into matters with which our Military Engineers are concerned, have been necessary or not? If the circulars, issued at various times by the Secretary of State for War, directing attention to incompetency, extravagance with public money, &c., have been called for or not? If all the pamphlets that have been printed teeming with charges of incompetency against engineer officers, are true or false? If all the letters, leading articles, &c., that have appeared in Professional and military papers and periodicals, the *BUILDING NEWS* among others, says the author, on the same subject, proceed from those who write merely for the sake of writing? or, if they, in common with commissions, committees, and pamphlets, tell us that there is something wrong in the organisation of the Corps of Royal Engineers, and that this cry will continue to be heard till a proper remedy is applied, and will not be quieted by mere temporary palliatives?

The Royal Engineers do not, they must themselves confess, occupy a very enviable position, subjected, as they have lately been, to attacks from all sides on their weakest point. There was the commission appointed to inquire into the state of our national defences, another on the sanitary condition of the army and the hospitals and barracks, another on the education of the officers of the corps; then Lord Herbert appointed a committee to examine into the method of conducting the works and buildings under the department. In no one of these inquiries, it must be said, have the results been in any way creditable to the Royal Engineers as a body, or the system under which they are appointed.

In architecture and in engineering, it is usually considered that from five to ten years of study must be passed through before the student is competent to practise, and Vitruvius has bequeathed to us a somewhat extended series of acquirements which few would succeed in making themselves masters of in that time; yet, according to the system under which the Engineers are appointed, they before they are twenty years of age undergo a course of training in permanent and field fortifications, including designing and building, the construction of gabions, fascines, &c., pontoon, barrel pier and other military bridges, mining, military sketching, road making, use of weapons of warfare, including the power and effects of artillery, as also the strength and manufacture of combustibles, photography, chemistry, electric telegraph, machinery, astronomy, foreign languages, architecture, civil engineering, land surveying!

It also appears, though it has not been so stated in evidence, "that some of the officers of military engineers have devoted considerable portions of their time to the study of international and commercial law, as well as to the management and control of military and civil prisons, gaols, &c., for we occasionally hear of their being very suddenly promoted from some military post to a consulship, and of the same officer being as suddenly removed from that to a civil professional duty. Then, again, we hear of military engineers being appointed governors of colonies, superintendents of prisons, inspectors-general of military prisons,

chairmen of board for management and control of convicts, and all this, with their pay and promotion in the corps simultaneously going on, although they themselves are away from it."

As the writer says, "this is a formidable list of acquirements to be possessed by a young man before he is twenty years of age; nevertheless, we have it stated by high authorities in the corps, that all engineer officers undergo a training in the several branches here enumerated, which must be before they leave Chatham, because, as is well known, the most pernicious of all systems of promotion is in force in the corps of Royal Engineers. When

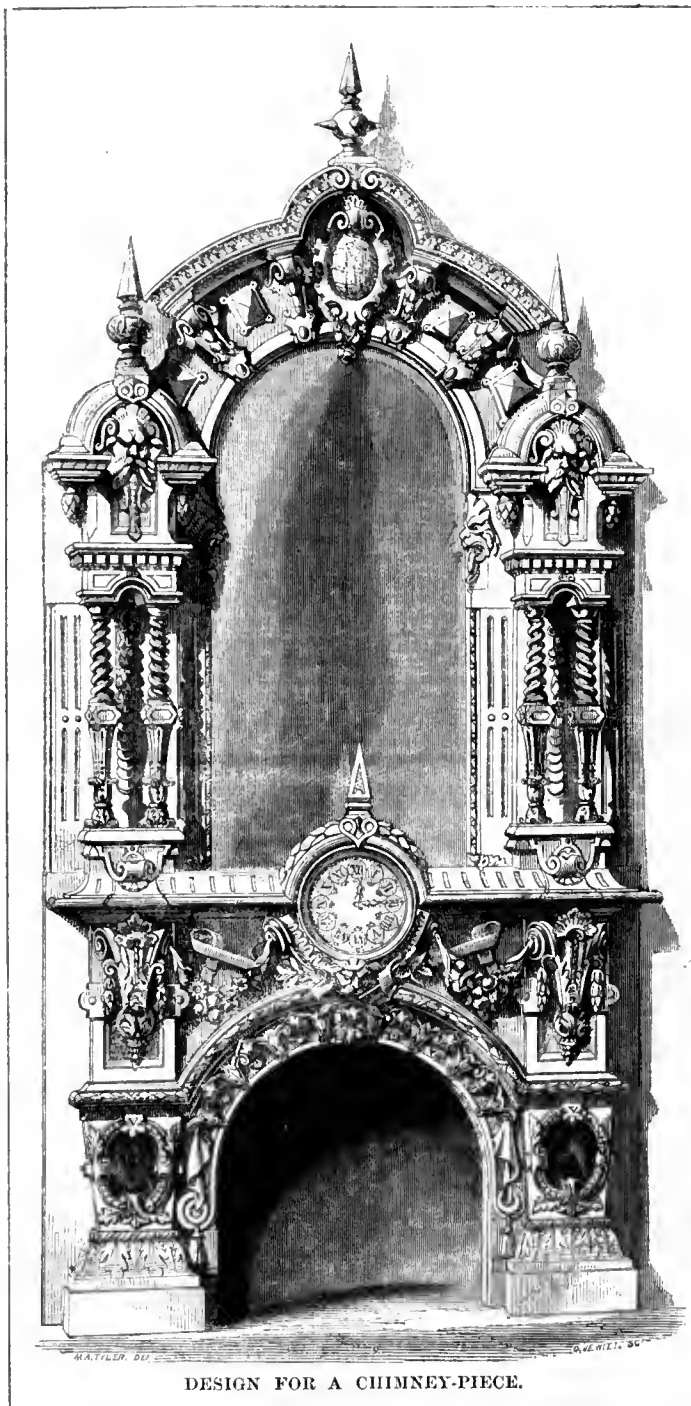
once an officer obtains his commission, and leaves Chatham, his promotion follows by seniority, as a matter of course, regardless of merit or ability—there is no subsequent examination. The greatest dolt, who has been crammed at college, and crammed again at Chatham, so soon as he can sign himself Lieutenant Royal Engineers, is promoted at the same rate as one who may be, both by the force of natural genius, as well as by education, an able and accomplished man. That there are clever officers in the corps, and many of them, cannot, nor is it intended here to be denied, but they are supposed to know something of so many things, extraneous to their real profession, that they have not even a complete knowledge of that."

With such a system, the result is inevitable. The officers themselves are not to blame; when impossible tasks are set, failure necessarily follows. It is madness to expect a single individual to be capable of becoming proficient in a dozen professions, any one of which is sufficient for the full employment of an ordinary brain. Consequently, "no engineer officer ever attempts anything without the assistance of others," and we find a numerous body of surveyors, draftsmen, &c., employed preparing drawings and specifications for the forts now being constructed, as well as those under consideration for the defence of the country.

Then with regard to the actual execution of the works, "All barracks, &c., are built by private contract, and when erected are kept in repair by private workmen, and for the best of all reasons, because it is proved to be cheaper and better than by any other system. Diligent inquiries have been made to ascertain the correctness of this, and in every case it is found to be so, no single instance to the contrary being forthcoming. And, even abroad, where it might reasonably be supposed that the Sappers and Miners, though they did not build, would at least keep in repair, those who undertake such works are invariably assisted by native civilians—the word "assisted," as applied in this sense, being capable of a very different interpretation to that usually assigned to it."

As regards the value of their labour compared with civil labour, it is remarked that many are under the erroneous impression that a soldier, who gets one shilling per diem working pay, works at one-fourth the cost of a civilian at four shillings per diem; and they also imagine that all Sappers' labour is the same as that of surveyors, draftsmen, or mechanics, being unaware that nine-tenths of the corps are only fit to be called labourers, and that their labour should be valued only as such, whilst, as regards the remaining tenth, their labour is not worth that of ordinary mechanics, as a rule, the exceptions also being very rare.

With the view to improve the existing state of things, the writer suggests that one of three things is absolutely necessary, either to relieve the



DESIGN FOR A CHIMNEY-PIECE.

* The Corps of Royal Engineers: Could it not be Re-organised; so as to produce an Efficient Body of Military Engineers. By an Officer. STANFORD, Charing-cross.



CHAPEL OF NOTRE DAME, BOULOGNE.—MR. C. F. HANSOM, ARCHITECT.

military engineer officers from the civil professional appointments they now hold, for which they are not qualified, and which they never undertake without the assistance of civil professional officers, and to confine them to their military profession, educating them so as to qualify them for the special duties which they will have to perform; or to create a new corps or body altogether, offering appointments in it to both officers and men of the present one; those who are unwilling to receive such to be placed on half pay if officers, and the men, if entitled to it, to be pensioned. To create a body of officers to be called staff engineers, who will have to instruct the troops in military engineering, so that they may be qualified to act when called on in the field. The admissions as staff engineers to be by competition, open to the whole army; the examinations to be conducted, where possible, by general officers, who have retired from the Royal Engineers; or, to hand over to the Royal Artillery, whose education is almost identical with that of the Engineers, all the military part of the profession, and to set about educating the Engineer officers, so as to qualify them for the civil professional appointments which they now hold on sufferance, at the mercy of the civil officers under them. To increase the Royal Artillery to a very trifling extent, to meet the extra demand that will be made on them, and remove from the combative list of the army the existing corps of Royal Engineers, instituting instead a branch or body of military architects for professional duties, such as are now termed civil professional duties; the admission into this new branch to be by competitive examination before the Civil Service Commissioners, and open to the whole country. By this means the cost of educating the officers of the corps of Royal Engineers would be saved to the country (except so much of it as would be required to educate about one-fourth of the number for the Royal Artillery); and the existing civil professional officers could be granted retiring allowances, or have compensation given them. The rank and file of the present corps to be disposed of, as in the previous scheme, as soon as possible.

ANCIENT AND MODERN SUPPLIES OF WATER IN ROME.*

THE unit or gauge of water supply in ancient Rome was $\frac{1}{16}$ ths of a digit in diameter, or 0.91 inch, the digit being 0.73 inch; the depth of the centre of the orifice below the surface of the water was fixed at 15 digits (or $\frac{1}{16}$ th of a Roman foot), equal to 10.96 inches; it furnished, therefore, 0.1508 gallons per second, or 13,029 gallons per day. Rondelet computes the ancient gauge to be 59.1951 cubic metres daily, and the modern one now in use at Rome 40.4552 cubic metres; but in the following calculations they have been taken at 40 cubic metres for the new Roman gauge, and 60 metres for the ancient or *quinary* as termed by Frontinus, and by which the discharge of the aqueducts was measured.†

From direct measurements made by Frontinus we have the following quantities of water discharged by each:—

	Gallons.
Appian and Augustan.....	24,166,950
Ancient Anio.....	58,679,988
Marcian.....	61,936,140
Tepulan.....	5,876,670
Julian.....	15,926,436
Virgin.....	33,067,824
Alsietinan and Augustan.....	5,176,752
Claudian.....	60,840,642
New Anio.....	62,579,628

Total 327,574,836 or 24,805 *quinaries*

By the ancient registers we find that, out of the total supply of 24,805 *quinaries*, only 14,018 *quinaries* were distributed; but Frontinus has proved that there existed numerous frauds on the part of those in charge of the distribution, who turned the water for the benefit of house proprietors who had no right to its use, and on the part of many neighbouring farmers, who pierced the canals, and by these frauds defrauded the state of more than 10,000 *quinaries*.

In a notice upon the distribution, value, and legislation of the waters of ancient Rome,‡ M. Dureau de la Malle mentions that the nice aqueducts only supplied in all 6,333 *quinaries*, and deduces this result from the inferiority of the diameter of the quinary, and “la supposition (note 4, page 3) que le centre de l’orifice du quinaire était à la même profondeur au-dessous de l’eau que le centre de l’orifice du ponce de fontainier§ (soit à 7 lignes.)”

This is an error. Rondelet has found that the ancient Roman gauge was a calyx or cylinder of given diameter and length, and placed horizontally in the side walls of the water towers in such a manner that the centre of the orifice of the calyx was at a distance below the surface of the water equal to the length of the calyx.

The modula of the different concessions to individuals had all their centres on the same line of level. This arrangement yet exists at the present day.

The actual gauge of Rome at the present day is one inch, or one-half of a palm, 0.7355 English inches in diameter, and the centre of its orifice is placed at 15 inches, 11.04 English inches below the level of the water. The inch is equivalent to a digit, and the actual gauge differs only from the ancient in that its diameter is one digit instead of five-fourths of a digit; but the depth of the centre of the orifice has never changed.

In comparing the above quantities of water supplied with the population

of ancient Rome, we have no perfect data, except that we may imagine ourselves to be somewhat near the truth in taking the maximum at one million inhabitants at the end of the first century of our era, under Trajan. Letarouilly fixed the population under the Emperor Aurelian, 270 of our era, at 820,000, and he deduces this number, first, from the surface occupied within the boundaries of the town; second, the number of the habitations; third, the consumption of wheat. Admitting, then, a maximum of one million at the end of the Augustan age, the water supply would have given 330 gallons per inhabitant.

The registers of distribution show that 14,018 *quinaries* were thus distributed:—53,655,978 gallons distributed outside the town; 22,542,642 gallons in the name of Caesar (imperial gardens, theatres and palaces); 50,803,482 gallons were distributed to private persons, giving a revenue yearly of £2,700; 58,119,606 gallons for public service—viz., 3,684,474 gallons for nineteen camps, 31,707,606 gallons for public establishments, 5,097,516 gallons for theatres, 17,630,010 gallons for 510 pieces of ornamental water.

As to the mode of distribution, there were 247 water towers in the time of Frontinus, from which all the pipes derived water, their centres being all on the same horizontal line. A decree of the Senate forbade any concessionist or subscriber to take water from any points in the conduits but these towers, in order that the public fountains, which flowed day and night without intermission, might not suffer any damage.

We are told that the most glorious work of Trajan was not only that of furnishing a great abundance of water to Rome, thereby rendering the air more salubrious, but of having rendered this supply as pure and agreeable as possible, and diminishing the prevalence of intemperance. After slight showers of rain the Roman waters were turbid and muddy; but this was not a natural defect of all the aqueducts or supplies, for the Marcian and Claudian, and some others, derived immediately from springs, were of a perfect limpidity. When the spring waters and the Anio streams came to be mingled, they were polluted by the impurities of the latter.

The Emperor Trajan classified, therefore, the supplies of water according to their respective origins. The Marcian, of the purest quality, held the first rank, and was reserved exclusively for drinking purposes, and the others were appointed to various uses, each according to its quality. The Anio canals were destined for the irrigation of gardens and the cleansing operations (sordidiora) of the town.

Among the rules and prescriptions handed down to us by Frontinus, we may notice a decree which forbids “in the neighbourhood of springs, vaults, walls, canals, and subterranean conduits, any enclosed garden, trees, vines, hedges, bushes, boundary walls, willow plantations, or reeds, at a less distance from the watercourse, on either side, than 15 Roman feet (14½ English).”

It was also enjoined that the masons should carry on the works of repair from the month of April to November, but to suspend them during the greatest heat of summer, inasmuch as it was as dangerous for the masonry as severe frost. The care of the aqueducts belonged anciently to the censors and aediles. Afterwards officers were appointed called *curatores aquarum*, with 720 men, whereof 260 (Publica), and 460 (Familia Caesaris) were two separate bodies.

THE CITY SURVEYOR'S ANNUAL REPORT.

FROM Mr. Haywood's report of works executed by the Hon. the Commission of Sewers of the city of London during the past year, we learn that 1,596 feet of new sewers were constructed, 1,402 feet being on the lines of old sewers. The total number of premises drained was 144, thus increasing the number of houses drained to 13,184.

No conclusion as to the cause of the deaths of four men who were found dead in Fleet-lane sewer has been arrived at, a circumstance considered to be remarkable, inasmuch as there was an apparent absence of all those conditions which are usually found in connection with such accidents.

Improvements have been effected by widening King Edward-street at its southern end, the houses on the north side of Newgate-street, between King Edward-street and Bath-street have been set back to the improved line, other streets have been widened and negotiations are pending for effecting farther improvements.

The experiments made in June and July last with reference to carburetting the gas supplied to the public lamps as suggested by the United Kingdom Carburetting Gas Company, were deemed so satisfactory that it was determined so to frame the specification of the new contracts for the public lighting that the Commission might, if they thought fit, adopt the carburetting process.

The business transacted by the Commission under the Metropolitan Buildings Act may be gathered from the following summary of cases:—Number of structures reported upon by the surveyors appointed by the Commission, 92; number of cases heard before the magistrate, 12; number of buildings shored up during the year, 8; number of cases certified by the surveyors as being completed, 82. This is a great reduction in number as compared with the year 1860.

The number of drinking fountains now within the City are as follows:—One at the corner of St. Mary-le-Bow Church, presented by Messrs. Copestake and Company; one at the corner of St. Sepulchre's Churchyard, at the corner of Giltspur-street, S. Gurney, Esq., M.P.; one at Fleet-street, in front of the Church of St. Dunstan-in-the-West, Sir James Duke, Bart., M.P., Alderman, &c.; one at Adelaide-place, London-bridge, the United Kingdom Temperance and General Provident Institution; one in Bishopsgate-street-without, in front of the Church of St. Botolph, Bishopsgate, C. Gilpin, Esq., M.P.; one in Moor-lane, opposite the Police Station, Mrs. Smees; one in front of the Royal Exchange, S. Gurney, Esq., M.P.

From a return on house inspection and removal of nuisances, it appears that, during the year, 9,111 inspections of houses were made by the district inspectors under the direction of the Medical Officer of Health, and, consequent upon their reports, the following notices were issued:—For works of drainage, 13; for pre-

* See page 129, ante.

† 1 cubic metre = 220.1 Imperial gallons, i.e., the ancient quinary = 13,206 gallons, and the modern = 8,804 gallons.

‡ Comptes rendus des séances de l'Académie des Sciences, séance du 13 Février, 1843.

§ The ponce de fontainier of France corresponds to a Paris inch gauge (0.92707 metres). With this diameter, and a charge of 7 lines (0.9158 metres) on the centre of the orifice, the flow per second is 0.000,222,166 cubic metres.

venting the issue of waste water upon the surface of pavements, 54; for lime-whiting and cleansing the interior of premises, 1,052, total 1,119.

The number of slaughter-houses existing in the City is now 66, being the same at the end of 1859. The regulations for these are again under revision. The number of cow-houses is 18, being two less than at the end of 1859.

CHAPEL OF NOTRE DAME, BOULOGNE.

THE chapel, of which we give a view in our present number, has recently been erected on the outskirts of Boulogne, on the Paris road. It is intended to be similar in design to a chapel erected in the thirteenth century, which had become famous, not only throughout France, but also throughout Christendom, as a place of pilgrimage.

The last remnant of the original structure was swept away during the Revolution, and a mean, unsightly building was erected soon after, in the worst possible taste; this has now been entirely demolished, and the present building erected on the original foundations.

The new building, has been designed by an English architect (Mr. Charles F. Hansom, of Clifton), and, together with two other churches in the same town, has been executed under his superintendence.

The Chapel of Notre Dame is executed entirely in the beautiful white stone from St. Leu. It is very small, being only 27 feet long by 15 feet wide internally. Each bay is marked by a projecting wall shaft, with carved capitals, from which springs a groined roof of stone, enriched with moulded ribs and sculptured bosses. The altar and reredos are executed in Caen stone, and occupy the centre and two side bays of the apse. The floor is laid with Minton's encaustic tiles, of rich patterns, and all the windows are filled with stained glass.

Externally, the history of the original chapel is portrayed in a series of sculptured panels in the lower compartments of the window, and in the tympanum of the entrance doorway.

The carvings and sculptured decorations have been executed by Mr. W. Farmer, of London.

THE SCREEN AND RECTOR'S STALL, EXETER COLLEGE CHAPEL, OXFORD.

A view of the interior of the new chapel at Exeter College, Oxford, was given in the BUILDING NEWS some time since, and showed the general aspect of the design as viewed from the west end. Our illustration—page 127 *ante*—presented a portion of the detail work to a large scale, exhibiting the western screen, the upper part of the rector's stall, and the entrance gates. The crocketed gable and door seen behind belong to the principal entrance to the building, and the stone corbelling springing from the columns at the back supports the organ-gallery, which is ranged against the end wall. The screen in question separates the chapel proper from the ante-chapel, and is a highly elaborated piece of workmanship, the cost of which was defrayed, we understand, by the undergraduates of the college. There are in all eight arches, carried by coupled columns of marble, and in the centre is a bold doorway, singly cusped, and diapered on the soffit. The entrance gates below are of brass, the cresting along the top of the screen, is of the same material. The rector's stall is the first to the right on entering the chapel, and it is distinguished from the range of ordinary stalls by the canopy, which, with its supporting shafts, is of oak. Great variety of design is manifested in this screen, as well as elsewhere throughout the building, the foliage being founded chiefly on natural types. This portion of the work has been executed by Mr. J. B. Philip, of London, who also prepared the whole of the screen, excepting the metal gates and cresting, which were supplied by Messrs. Skidmore, of Coventry. The stalls and woodwork were supplied by Mr. J. R. Symm, of Oxford, who was the contractor for the works generally. Mr. G. G. Scott is the architect.

THE ARCHITECTURAL EXHIBITION.

ON the occasion of issuing the balance sheet for the year 1861, and before speaking of the business of the past year, it becomes the painful duty of the Committee to mention, with the deepest regret, the recent loss which the Society has suffered, and which stands recorded in their minute-book in the following terms:—"That the Committee of the Subscribers of the Architectural Exhibition desire to record, with sentiments of the deepest respect, their sense of the great loss which this Society has sustained by the lamented decease of his Royal Highness the Prince Consort, who for many years, as Patron of this Society, has given the direct and public sanction and support of his name to its objects, and this Society has thus a special and peculiar reason to deplore the loss mourned in common by all who are engaged in the advancement of art."

The Committee felt it to be their duty, and one which would meet with the approval of every supporter of the Exhibition, to make a donation of £10 10s. out of the funds of the Society towards the proposed memorial to his late Royal Highness.

By the statement of accounts, it appears that the Society still prospers, and that there is an increase of the balance in hand. Some additional expense has been incurred, in consequence of the Committee taking upon themselves to pay the cost of carriage of all drawings from the country, and back again; and they will continue to do this, and to give free tickets of admission to Exhibitors during the day, reserving only the evening meetings and lectures for subscribers and season ticket holders exclusively.

It is said that the thanks of the subscribers are due to A. J. B. Beresford-Hope, Robert Kerr, E. A. Freeman, R. P. Pullan, and G. E. Street, Esquires, and the Rev. J. L. Pettit, who lectured on the Tuesday evenings, and to G. G. Scott, Arthur Ashpitel, W. Burgess, E. B. Lamb, and J. W. Hugall, Esquires, who presided on these occasions.

The next Exhibition will open at the *Conversazione*, on Tuesday, the 25th of March, and on the following day to the public.

The Committee trust that on this occasion all those who have any suitable works to exemplify will exhibit, and that the Architectural Exhibition of 1862 will far exceed all that have preceded. They are glad to announce that the Exhibition will contain an entire collection of the original sketches and drawings of the late A. Welby Pugin, and which possess the highest interest for all lovers of architecture.

All drawings and models, we may remind our readers, must be delivered at the Galleries, Maddox-street entrance, on Monday, the 3rd of March.

DECISIONS IN THE COURTS.

INJURY TO MINES BY RAILWAY.

Bagnall and Another v. The London and North Western Railway Company.—*Court of Exchequer.*—A railway company, under the authority of an Act of Parliament, took for their line ground lying over mines, then not worked, belonging to the former owner of the surface. In order to gain the level of their line the company took away a stratum of clay, and left a surface of porous rock; they carried on the line, at a slight ascent, to a brook at some distance, over which they carried the line by a flat bridge, not constructed so as to contain the waters in times of flood. Between this brook and the surface of the mine there was originally a rising ground, through which the company made a cutting for the level of their line. Afterwards the owner of the mines began to work them, and the line began to sink; the company kept up the level of the line by heaping ashes and such substances thereon, and on the drains by the side of the line, which had also sunk. The company were bound to keep up these drains, but, after they had sunk, did not. A flood came, and the waters of the brook, where it is crossed by the bridge, overflowing the girders, were carried down along the hollow of the line and of the drains to the spot overlying the mines, and, sinking through the porous rock, deluged the mines and stopped the works;—Held, that the owner of the mines had a right of action against the company for the injuries arising from both the overflow from the brook, and the fall of rain-water on the spot, and the overflows of the springs laid open in the cutting, and that his remedy did not lie in compensation under the Act of Parliament.

In giving judgment Baron Bramwell said, the material facts in this case are as follows:—The plaintiffs are owners and occupiers of coal mines. The surface soil, as well as the coal below, formerly belonged to the same owner; but a railway company, to whose rights and obligations the defendants have succeeded, took the surface, under the powers of a private Act of Parliament, for their railway, and constructed it thereon. The railway company—by which may be understood indifferently the original company or the defendants—cut and removed upwards of 20 feet in thickness of the surface soil over where the plaintiffs' mines now are, to get the level at which they laid their rails. This surface soil was clay, impervious to water; they removing it, a porous rock was reached. The soil was in like manner cut away by the railway company along the length of the line to a lower district of country, through which a brook flowed. There the railway was made on or above the natural level of the ground. It was carried over the brook by a flat bridge. The line of railway sloped downwards from the bridge to the part over the plaintiffs' mines. The bridge was sufficient to let the ordinary water of the brook pass, and even more, but was an impediment to the passage of water in large floods. The railway company was bound to make and maintain drains, the obligation being substantially the same as in the Lands Clauses Consolidation Act. A flood happened in 1860, and the result of the combined acts of the company was, that water, part of which would have escaped but for the bridge, flowed down the railway, and, the high ground between the brook and the surface over the mines being removed, it reached that spot, and the high ground and protection of clay then being gone, and the drains being imperfect, as after mentioned, it permeated into the mines. So also did the water falling on the spot itself, and the springs arising in the cutting. But it here becomes necessary to mention, that when the railway was making, the mines were not worked under nor within forty yards of the railway. The railway was made with drains at the side sufficient to carry off the water which came or fell there, without doing any mischief, as matters then stood. When the plaintiffs' workings came to forty yards from the railway, they gave the defendants notice under the local act, which may be treated as substantially the same in its provisions as the Railway Clauses Consolidation Act. The defendants, however, did not purchase the mines. The plaintiffs accordingly worked on, and when their workings came under the railway, from no fault or negligence of theirs, but as a natural consequence of fair and lawful working, the railway sunk, and continued to do so from time to time. The defendants repaired this by throwing materials of a porous nature on the sunk parts; they did not, however, repair and puddle the drains, which, from the sinking of the soil, became insufficient; and even had they been sufficient, they would not have carried off the flood-water of August, 1860. For the damage sustained from the water thus getting into the mines this action was brought. It seems to us impossible to state these facts without shewing that the plaintiffs had a claim on the defendants of some kind. Without any fault of theirs, the natural condition of things had been altered. The water of a brook, which flowed at a distance of one-third of a mile from their mine, inaccessibly to it, by being separated from it by a ground 25 feet high, has been diverted over it, its natural covering and upper soil being removed from it. From the last-mentioned circumstance, and the want of sufficient drains, the rain which fell on it, and the springs which arise in the cutting, have got into it. These are the acts of the railway company alone. It is said that the plaintiffs have brought about the mischief by working their mines; but they had a right to work them as they did; they lose no right by doing so. It could not be contended that had the defendants thought fit to agree to purchase they could have done so at a nominal price, on the plea that if the plaintiffs worked them they would be worthless, as they would be drowned: We do not say that the defendants were bound to restore the surfaces they might have diverted their line, and left hollows over the spot in question, but they were bound by their Act to make and maintain effectual drains. This reasoning applies to water other than that from the flood. As to that, the plaintiffs' case is still clearer. Suppose, instead of the defendants' railway passing through the cutting, and over the brook, it had been a through railway, belonging to a private proprietor, joining the defendants' railway just before reaching the plaintiffs' mines, would not such private proprietor have been clearly liable to this action? And, if so, why are not the defendants? As to the flood-water, they are not sued merely as the railway company who have taken the surface of the plaintiffs' land, but as persons who, by their acts on lands at a distance, have done this injury; and it seems to us they would be liable for damage by flood-water if the plaintiffs had continued owners of the surface, and, for some reason, had thought fit to remove it to the depth the railway company has, for they would still be the acts of the defendants which sent the water there. But it was suggested that if the plaintiffs had a claim, it was to be enforced under the compensation clauses. We think not. The plaintiffs are not injuriously affected by the works of the railway company. Supposing the company had possessed no statutory powers, they could not have been restrained by injunction from executing any of these works, nor could any action have been maintained against them simply for their construction. The railway company would have been entitled to say, "these are not injuries, and never will be. By means of puddling the surface, and drainage, no water will ever reach you;" nor need it, as appears. It is not, therefore, the works intrinsically which injuriously affect the plaintiffs, but the defendants' wrongful conduct in relation to them in not making and maintaining outlets for the flood-water, or damming it off the plaintiffs' land, or covering the surface thereof with clay, and in not maintaining those drains which were sufficient to carry off the rain which fell, and the spring water which arose there. Our judgment is for the plaintiffs in respect of both these claims.

THE MASTERPIECES OF CHURCH ARCHITECTURE.—Dr. Carl von Lützow is preparing a work on Ecclesiastical Architecture (*Die Meisterwerke der Kirenenbaukunst*). Taking the chief buildings, the author gives the history of their erection so far as it may be known, and then describes their present state. The work is to be illustrated; the first part has appeared.

RELICS OF EASTERN ARCHITECTURE.*

INSTEAD of following the usual route pursued by Eastern travellers—crossing the desert from Egypt to Palestine, and proceeding thence to Syria—Miss Beaufort and her sister sailed furtively from Alexandria to escape from the procrastination and injustice of an Egyptian court of law. After visiting Smyrna—where Mr. Hyde Clarke and the Ottoman Railway Company are teaching Arabs the advantages of railways, and are rapidly inoculating them with a taste for swift, easy locomotion—the authoress took land at Beyrout. They, however, previously visited Mitylene, and, while the steamer called at the ports, Rhodes, Latakia, and Tripoli. Coasting along they caught sight of Budrun, where their father, the late Sir Francis Beaufort, may be said to have commenced his life-long labours in the service of science. The feminine modesty of Miss Beaufort has prevented her from doing more than make a passing allusion to the explorations of the late hydrographer to the navy; but we, who have no such motives for silence, ask the indulgence of the reader for a brief digression, which the publication of Mr. Newton's researches at Budrun will invest just now with interest.

Karamania comprised the ancient provinces of Lycia, Pamphylia, and the two Cilicias, with parts of Caria and Phrygia. Mount Taurus, which cut the inhabitants off from communication by land with the central government, and the remoteness of the shore from the ordinary sailing track, combined to render this portion of the Mediterranean seaboard almost unknown, though it had been the site of Greek colonies famous through all time, the scene of the heroic deeds of Cyrus and Alexander, and the birthplace of the Apostle to the Gentiles. "This serious chasm in geography determined the Lords Commissioners of the Admiralty to employ a frigate on the survey of the coast, and H.M.S. *Frederiksteen*, of 32 guns, being then stationed in the Archipelago, was selected for that purpose." Nearly fifty-one years ago Captain Beaufort sailed from Smyrna on his voyage of rediscovery. We pass over the places he visited and the remains he brought to light, to Budrun—a corruption of S. Pietro probably, as the Arabs pronounce *p* as *b*, and confound *d* with *t*—to encourage, by the example of Mr. Newton's success, after Captain Beaufort's failure, the spirit of research. A curious incident arising out of the war induced the Captain of the *Frederiksteen* to visit the locality at first. News had reached Malta of unusual facilities having been afforded to a French privateer in the disposal of her prizes, so the *Frederiksteen* was ordered to look in at the port, and her captain to make a note of what he saw. All that he could discover of Halicarnassus is described in a paragraph:—"The walls of the ancient city may be here and there discerned, and several fragments of columns, mutilated sculpture, and broken inscriptions are scattered in different parts of the bazaar and streets. Above the town are the remains of a theatre, which measures about 280 feet in diameter, and which seems to have had about thirty-six rows of seats." With our knowledge of Mr. Newton's discoveries, how strangely do the disappointments and speculations of Captain Beaufort read!—"We searched with eagerness, during our short stay, for some traces of the celebrated Mausoleum; but our toil was entirely fruitless. Yet, if it stood on the higher ground behind the present town, or even if its site be now covered with modern houses, still it is scarcely credible that the remains of a building of such peculiar shape and of such sumptuous execution should have been so completely removed or destroyed as to leave no vestiges by which even its position may be recognised." From these premises Captain Beaufort was inclined to imagine that the present fortress occupies the site of the Mausoleum—"A bold, elevated rock, conspicuous from the sea, the shores of the bay, and from all parts of the city, would seem to have been a spot eminently suited to the ostentatious grief of Artemisia." What added weight to this hypothesis were the observations made of numerous pieces inserted in the walls of the castle, representing processions and combats between draped and nude figures, and the report of a Greek, who declared to have seen in the interior a long frieze, with highly wrought figures, besides many other pieces of sculpture and inscriptions. So Captain Beaufort concluded that when the Knights of Rhodes hastily built (1402) the castle upon the ruins of a fortress they had just surprised, they paid little attention to the "preservation of pagan relics," and, in fact, quarried the stones for their structure from the remains of the Mausoleum. Mr. Newton has, within the last few years, set the matter at rest.

At Rhodes the authoress found the church of the knightly order in ruins, from the explosion (1856) by lightning of powder which had been concealed and forgotten in the vaults beneath. At the siege by the Turks, upwards of three centuries ago, the fortress was compelled to surrender for lack of this very powder. Of the eight fine auberges which belonged to the languages of the Order but five remain distinguishable—that of England, exhibiting the date 1483, and the shield and arms of Peter d'Aubusson, Grand Master, who won for the fortress the proud title of "Buckler of Christianity," at the first siege; that of Italy, bearing the date 1519, and the arms of Fabrice de Carretto, last Grand Master before the second siege; that of Spain and Portugal, showing the scutcheons of the two nations united, of the Order of Amboise, and of the two Commanders; that of Toulouse, with the arms of France, the of Order, of Cavetto, and of Com. Flota, with the sub-inscription, "P. S. Dns. F. Franciscus Flota Prior Tholose construxit anno 1518;" and that of France, the best preserved of all, for it has been cared for in modern times, and the doorway, with its elegant mouldings of the usual twisted cable, after the Saracenic type,

small columns, and similar mouldings between the floors, is one of the chief architectural features. Over the doorway are the inscription, "De France le gnt prior F. Emery de Amboise, 1492," the cross of the Order, and the pales of Amboise; and two scutcheons leaning on lions rampant, with the canting arms, three nails, of Pierre Clouet, the architect, on each. (Where is the mark of the architect of the English auberge?) Then come two tablets exhibiting the arms of the Order and Amboise, with the motto, "De Amboise em gnt prior;" tablets with the arms of Villiers de l'Isle Adam, and scutcheon with the royal arms of France and the motto, "Voluntas Dei," and the date 1495, St. Louis at the side, and "Dieu (ayde) le Pelerin" above; a second scutcheon of Amboise, and the cardinal's hat presented to P. d'Aubusson, his shield, and that of the Order. A little beyond is the Chapelle de France. Seeing the care with which France preserves the memory of her past achievements, as in Rhodes and in Tunis—where she has restored the chapel of St. Louis—it is not surprising that her influence should be so great over Eastern minds. It must be a source of regret that neither the English Government nor the present representatives of English families that derive their illustration from the valour and piety of the Knights should have cared to preserve the auberge of England from decay and profanation as a monument to the chivalry of our race. A trifling subscription would buy the structure and freehold and install a guardian or a school. We do not despair of this being done, if Mr. Scott can succeed in awakening public interest and consideration for architectural monuments, especially since Rhodes is likely to grow into importance from the British Museum having commissioned M. Salzmänn to uncover and collect antiquities from a Phœnician-Greek necropolis discovered near the village of Kalvarados, and believed to be that of Caroiros. He has already recovered sarcophagi, vases of all sizes, from three feet diameter down to a few inches, of every conceivable form, and ornamented with innumerable designs; figures to surmount long bottles of alabaster and stone; small porcelain idols, scarabei, buttons, and pieces of lead, exhibiting Phœnician characters; gold band and bracelet, an olive crown, with the leaves gilt bronze, and the fruit in porcelain (*query*, enamel?); lamps, rings, and beads, and gold oblong plates, so repeatedly found in the tombs, that M. Salzmänn supposes them to have been hieratic ornaments. The plates are each two inches long, always exhibiting the figure of Astarte. They are, perhaps, now in the cellars of the British Museum, and may be revealed to the gaze of the curious in the course of the next century, provided the increase of accommodation in Great Russell-street keeps the same rate of progress as it has done hitherto.

From Latakia there was little to report architecturally. There are ruined columns, friezes, and a triumphal arch, overgrown with weeds. We may add, *en parenthese*, that in the neighbourhood there is capital snipe shooting, and that the tobacco so prized in Europe is cured with the smoke from thorn fires, and is on that account—from its impregnation with pyroligneous acid—detestable to Oriental travellers who have enjoyed the Macedonian weed, or even the commoner tobacco of Southern Syria, such as is used throughout the Lebanon and in Damascus.

Tripoli is dismissed in a paragraph, for the short time allowed by the stoppage of the steamer would not allow of critical explorations, and yet it is, perhaps, the loveliest spot in Syria;—to the admirer of nature the most beautiful, and at the same time, perhaps, the most unhealthy to a European. The sources of natural beauty round about Tripoli are the causes of ague and low fever. Our talented Vice-Consul there, Mr. Mercier—who, by-the-by, is unpaid, even to the postage of his dispatches, has never been free from ague during the whole period of his residence. Tripoli was ever a favourite with the Crusaders, and they did their utmost to embellish it. Here Raymond of Toulouse built a castle on the banks of the Kadisha, which is fed by a thousand streams from Lebanon, to protect pilgrims, for it is the nearest port to the Cedars. From the Lebanon, which here attains its greatest altitude, two spurs shoot down to the coast, maintaining nearly parallel directions, and sink into the soil just above the town—one affording the site for the castle. The spurs are clothed with stately olive trees, interspersed here and there with fruit and flowering shrubs. The valley, down the centre of which flows the river, is a series of gardens planted with orange, lemon, fig, and apricot trees, pomegranates, clematis, sugar-cane, and creepers of many-coloured flowers. At the end of a long summer the whole of the valley is green, picked out here and there with the more vivid colours of ripe fruits. Right across the valley, and bestriding the river, is an aqueduct, built by the Crusaders, which conveys a pure cold stream from Lebanon to the innumerable fountains of the city. The Crusaders' Bridge, as it is still called, is so overgrown with perfume-giving plants that its construction cannot be easily discerned. The streets of Tripoli will bear favourable comparison with those of any Eastern city. They are narrow, it is true, but they are not so encumbered with filth as those of Beyrout. The houses have a European aspect, especially in the dressing of the stones. Nearly every one has an ever-flowing fountain, and almost all the streets are similarly provided. Here and there you are met in out-of-the-way corners with a stone cistern curiously carved. You hear the pleasant sound of falling water, and will see a little crystal stream, escaping from some fault, and running silently into a nook, where it disappears from sight. In this respect Tripolitans are better off than Londoners. They have a constant supply of pure water; we an intermittent supply of foul water contaminated by sewage.

To Beyrout the journey is not long. There are three routes: by sea, by following the coast, and by going through the Kesrawan. The first no architectural traveller would take. If he follow the coast he will visit Bshreh, which strikes the eye by its combination of rich culture, fantastic rocks, and flowery dells. The Kadisha foams and sparkles, and

* "Egyptian Sepulchres and Syrian Shrines." By EMILY A. BEAUFORT. Longmans, London.—Continued from page 123.

speeds away to the coast between rocks that rise vertically to upwards of 1,000 feet. At Jebel—the Gebel of the Bible—he will see the walls of a feudal citadel, with quaint machicolations seated on Phœnician masonry, and the surrounding country literally strewn with granite columns; he may, perhaps, gather information respecting Phœnician art from the recent researches of M. Rénan. After fording the Dog river, he will climb the face of a rock, where above him are the sculptured tablets of Assyrian conquerors—at all events, of the nine that have been recovered six are imputed to the Assyrians and three to the Egyptians. The carvings on the last are scarcely discernible, and then only under certain conditions of light, while most of the figures on the Assyrian tablets are distinctly visible. Lepsius says the Egyptian tablets all exhibit the cartouches of Rameses II.—that Sesostris, who, according to Herodotus, left *stela* and figures as monuments of his conquests in Palestine and Syria thirteen centuries before Christ, and which the historian reported having seen. Mr. Layard considers the Assyrian tablets to be the work of Sennacherib, the founder of the palace of Kouyunjik, and whose army was destroyed in Philistia, when the Angel of the Lord “smote in the camp of the Assyrians an hundred four score and five thousand,” but Dr. Robinson believes the tablets are the records of the five Assyrian monarchs who successively invaded Syria, or passed through it on the way to Egypt. It is one of these tablets—one of the links in the remotest history of man—which the French army defaced. If the tourist takes the other route he will come upon the fountain of Adonis, and upon the ruins of the temple of Venus, where was practised that strange and impure worship which led to Constantine’s destroying the structure as a nest of wickedness, but which, nevertheless, survives on the banks of the Ganges, and could be traced 150 years ago in the names and traditional ceremonies of the inhabitants of Provence.

The extent to which our notice has extended compels us to defer to a more favourable opportunity accompanying the authoress to the towns and cities of Lebanon, Syria, and the Holy Land, and to an investigation of her statements with respect to Jerusalem. Meanwhile we tender her our hearty thanks for her interesting account, thus far, of Egyptian sepulchres and Syrian shrines.

NORTH LONDON SCHOOL OF ART.

A PUBLIC MEETING was held in the Memorial Hall, Church-street, Islington, on Wednesday evening, to inaugurate a proposal to erect a building for the North London Gallery, Museum and School of Art. Earl Granville presided.

The school was established in May, 1853, with a view to supply a want which was then generally felt in the locality for an elementary school of drawing. After some preliminaries, the original committee sought an alliance with the Government project, then coming into operation, and consequently the school became a district school in connection with the Department of Science and Art. By this means the school secured the co-operation of the department, and obtained for the classes a supply of models and examples, together with the services of trained masters. It appears that notwithstanding the obscure locality of the present school-house in William-street, Clerkenwell, its difficulty of access, and want of proper arrangement and convenience, the students have steadily increased in number, from year to year, till at length they have fairly outgrown the present building. The evening classes now comprise 105 male and female students. It has therefore become very desirable that the school should have a home of its own in a more suitable locality.

Earl Granville in addressing the meeting, said, I have felt strongly that some reproach, not without foundation, attaches to us on account of the comparatively little encouragement which we in this metropolis have afforded to the progress of art. Whether it be owing to the peculiar character of our municipal institutions, or to the fact that a large portion of the richer inhabitants of our metropolis reside in it only during some months in the year, and consider their homes to be more in the country than in London, or that those persons who are constantly resident are more like the population of a nation than of a single city, certain it is there is not to be seen here that amount of active civic patriotism which is to be found developed in our large provincial towns. It is, therefore, highly satisfactory to me to see such an assembly as this met for so noble an object, and to be a sharer in that which, so far as this district is concerned, may be regarded as a great metropolitan work. There is another feeling, which I cannot doubt is shared by many present, which makes me very anxious to contribute my mite to any work which is to promote the progress of art among the masses of this country. I allude to that sad calamity which overwhelmed the nation at the close of the last year, when we lost one who by his character, his great ability, and high rank was placed in a position where his influence was exerted with advantage to the promotion of good taste in the productive industry of the country. I need only mention to you the name of the late illustrious Prince Consort to evoke from you a ready assent to the assertion that he devoted the eminent qualities with which he was endowed to the benefit of the country. It is not for me, on this occasion, to pass any eulogium upon his late Royal Highness, or to allude to those prominent virtues or those statesmanlike qualities which made him a help and a support to the Sovereign, so as to make the institutions of the nation strike deeper into the heart of the country. I will not now say what he did for science, but this is, I consider, a fitting occasion to speak of what he did for the promotion of art and the diffusion of good taste among all classes of her Majesty’s subjects. That illustrious and widowed lady has associated with her her subjects in affliction, and has declared that it is her desire to promote to the utmost of her power those objects which her husband had so much at heart when alive. There is, therefore, no one person in this room, or in the nation, who does not feel that in his own sphere, and within the limits of his own capacity, it is his duty to co-operate with his Sovereign in this national and most patriotic work. I have another feeling of satisfaction in attending this meeting, which is this, that the department with which I am officially connected, will probably, if you carry out your scheme, become associated with you in this good work. I am not going to give a history of what it has already done, but I cannot help speaking with some satisfaction of the great progress which has been made

by the permanent establishment of schools of design under the encouragement of Government in the diffusion of art and art education, I was this afternoon looking over some reports connected with those institutions, and I was much struck at the contrast which some of the figures and statements connected with them ten years ago make as compared with those of the present day. In 1851 the expense was not so very great, but then all Parliamentary grants were abolished, except in the case of those institutions which were shown to be directly profitable; but then the amount of voluntary subscriptions increased, and now we no longer look to them as the ground of action, except to assist in the building of schools. The noble earl having shown how the number of schools had increased from twenty to eighty-six, and the number of pupils from 2,600 to from 17,000 to 18,000, while the cost of education per head had fallen from £3 2s. to 8s. 4d. per head, proceeded to say: If you ask me what has been the practical result of all this, I will not myself answer the question, but will refer you to those cities and large towns where art and a knowledge of beauty and of design enters into the production of the local manufactures, sure that there is not one of them that will not state that the people have derived great advantages from the establishment of such schools among them. This is the realisation of the Prince Consort’s idea in promoting the Great Exhibition of 1851. I recollect that at the preliminary meeting some of the most eminent statesmen of the day, in speaking of what might be the probable results of that movement, said that in those works which required excellence, and the actual application of science to machinery, and in the production of the useful, we would be sure to excel the foreigner, but where imagination was brought into play, where artistic taste and design were applied to the beautiful and ornamental, we should be prepared to find ourselves excelled by the Continental manufacturers. I would be sorry to make a prophecy now, but hoping and believing as I do, that the coming Exhibition will be a great success and prove the complement of the work originated in 1851, I expect to see not the contrary results but results of a slightly different character. It will I think be found that while we maintain our pre-eminence in the production of practical and useful objects, we will feel some surprise at the strides which foreign nations have made in the same objects, and foreigners on the other hand will be surprised at the gigantic strides that we, when put upon our metal, have made in the application of artistic science and taste to not only the more costly, but also to the more universally used articles. For this some credit is due to the Schools of Art. One of the great peculiarities connected with art is, that whether we look to ancient or to modern times, to this country or to the other nations of Europe, at the most a choice few obtained employment in producing works of art for the enjoyment of a select circle of persons; whereas there is now a great change taking place, and many are employed in providing artistic enjoyment for the great masses of the people. The advantages of such a change cannot fail to be appreciated by such a meeting as the present; but if you are to produce the greatest possible effect by art instruction, then you must educate not only the artisan, the producer, the designer, and the workman, but also the great masses of the people who are to enjoy their works must have that amount of training and education which will enable them to derive that enjoyment from the contemplation of such works. Nothing has such an effect on character as a knowledge of excellence. Nothing so much contributes to ambition of the right sort, and to the modesty of the individual, as when he knows what can be done by others better informed and better qualified than himself. These are the objects here in view, and I cannot overstate the advantages to be derived from them in regard to the staple manufacture and trades of the district of Finsbury, especially watch and clock making, and jewellery and cabinet making. The noble earl concluded by wishing success to the efforts now being made by the committee for the establishment of the North London Gallery, Museum and School of Art, and expressing the gratification it would give him to find them in a position to apply to Government for its support.

Several gentlemen addressed the meeting, and the following resolutions were unanimously carried:—

That the knowledge of drawing and the arts of design are of essential importance to the arts and manufactures of this country, and to enable them to hold their proper position in competition with those of other nations.

That it is desirable that a building (free of rent, in the borough of Finsbury) be erected, for the purpose of establishing on a permanent basis the North London Gallery, Museum, and School of Art.

And that a subscription be opened for the purpose of raising the necessary funds for the building, and enabling the committee to obtain the benefit of the usual Parliamentary vote for building schools of art.

AWARD OF PRIZES BY THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT the Special General Meeting of members only of this body, held on Monday last, Professor T. L. DONALDSON, V.P., in the chair, the printed notice convening the meeting, which was assembled to consider a report from the Council as to the award of prizes, was read from the chair.

The Royal Gold Medal.—In conformity with the recommendation of the Council, taken into consideration by the meeting, it was unanimously resolved:—That it be humbly submitted for her Majesty’s gracious consideration, that the Royal Gold Medal for the year 1861 be awarded to the Rev. R. Willis, M.A., F.R.S., honorary member.

The report of the Council relative to the essay and drawings received in competition for the medals and prizes of the Institute, and the designs for the Soane Medallion, having been read, the adjudication of the prizes was confirmed, as follows:—

To the author of the Illustrations and Description of the Church of St. Peter and St. Paul, Breckhurn Priory, Northumberland, the silver medal of the Institute, with the sum of five guineas.

To the author of the design marked M, for a Museum of Sculpture and Painting, a prize in books of the value of five guineas.

To the author of the design with the motto “Hope on, Hope Ever,” for a small Market-house and room above, the President (Mr. Cockerell’s) prize.

To the author of the design with the motto “Mente et Manu,” for a Villa, an Institute prize in books.

“Quid Nunc,” Chapel, and “Humber,” Villa, both commended.

To the author of the designs with the motto “Con Amore,” Mr. Tite’s prize.

To the author of the design with the motto “ελεος,” for a Dispensary, the Student’s prize in books.

"Z." and "M. R." commended for their designs for a Dispensary.

To Mr. S. Fry, student, for the best series of Monthly Sketches, a prize in books.

We are at present unable to give the names of the successful competitors who sent in designs under mottoes, because, owing to some mistake, the envelopes containing them were not opened at the meeting on Monday evening. We understood, however, that there is no doubt the recommendation of the Council as to the great prize—the Royal Gold Medal—will be confirmed by the Queen.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.

THE first *conversazione* for the season of the Society for the Encouragement of the Fine Arts took place at the rooms of the Winter Exhibition, 120, Pall-mall, on Wednesday evening, and was attended by a very numerous assemblage of ladies and gentlemen. On this occasion the prize medals awarded last session were presented. In the course of the evening the chair was taken by Mr. DUTTON, who said he appeared before the meeting under disadvantageous circumstances, inasmuch as Mr. Tite was to have taken the chair, but Parliamentary and other avocations prevented him from doing so. As to the position in which they were at present placed, he might say that it had been the main object of the Society to take care of the rising genius of the day, and, therefore, in passing by all those artists who in their respective branches had so very much distinguished themselves, they must not consider it in any sort of way a demerit that the Society had not deemed it right to award them medals, as it was considered more within its province to look to rising genius than to artists who had already risen and established themselves, and who of course were so well known that they could not in any degree find fault with the present proceedings. It was always agreeable to offer the meed of praise to rising merit.

Mr. HENRY OTTLEY, hon. secretary, then read a short report from the Council of the Society, which stated that the prizes, silver medals, had been awarded as follows:—

HISTORICAL PAINTING.—Mr. Marcus Stone, "Clandio and Hero," in the Royal Academy.

LANDSCAPE.—Mr. McCallum, "Spring—Burnham Wood," Royal Academy.

GENRE.—Mr. Calderon, "La Demande en Mariage," Royal Academy.

WARREN COLOURS (Two Prizes).—Mr. S. Read, "Interior of St. Augustin's, at Antwerp," Old Water Colour Society.—Mr. E. H. Warren, "Rest in the Cool and Shady Wood," New Water Colour Society.

SCULPTURE.—Mr. G. Halse, "The Tarpeian Rock," Sculpture in bronze. Royal Academy.

ARCHITECTURE.—Mr. A. W. Blomfield, M.A., (President of the Architectural Association.) Design for "Mission House," erected in Bedfordbury, Westminster, in the Architectural Exhibition.

There had been no award made for poetry or engraving, and the award for music was postponed, but the Council hoped in the course of the present session to make an award in that department of the fine arts.

Medals had been awarded for valuable services rendered to the Society to Miss Parepn, Herr Formes, Signor Gardoni, M. Ole Bull, and Mr. Santley. A medal was also awarded to Mr. S. Rosenthal for making a design for the Society's medal and other valuable services rendered to the Society.

The prizemen present were then called up and received the medals from the Chairman amidst the applause of the meeting.

The musical arrangements of the evening were exceedingly effective, and embraced the following programme:—

Part I.—Duet, "The Sailor Sighs" (Balle), Miss Emma Boden and Mr. Edward Southwell; Aria, "Stride la Vampa" (Verdi), Miss Bellingham; Old English Song, Mr. Lawler; Cavatina, "Ernani Invelema" (Verdi), Madame Furst; Solo (Pianoforte), "Les Arpeges" (Hailah), Madame de Vaucheran; Song, "Thou art so near" (Reichardt), Herr Reichardt; German Lied, "The Maid of the Ganges" (Mendelssohn), Mr. E. Southwell; Aria, "In questa tomba oscura" (Beethoven), Miss Emma Boden.

Part II.—Solo (Violin) (Ole Bull), M. Ole Bull; Song, "The Green Trees" (Balle), Miss Bellingham; Song (Herr Reichardt), Reichardt; Solo (Pianoforte) (Ganz), Herr Wilhelm Ganz; Ballad, "Cease your Funning," Madame Furst; Sacred Song, Mr. Lawler; Song (Wallace), Miss Emma Boden; Duet, "So 'am'i ancor" (Verdi), Madame and Mr. Edward Southwell.—Conductor, Mr. Alfred Gilbert.

Refreshments were supplied in the upper gallery of the Exhibition, and the proceedings of the evening were conducted with marked success.

SOCIETY OF ARTS.

AT the meeting of this Society on Wednesday night, the Duke of Wellington, K.G., in the chair, the paper read was "On the Art of Constructing Turkish Baths, and their economy as a means of cleanliness," by Mr. David Urquhart. The author began by drawing attention to the great antiquity of baths of this character. Their use appears to have prevailed in these islands 2,000 years ago, and he therefore urged that he was merely advocating the restoration of a habit which in ancient times and in other countries had been found so beneficial. He avowed, however, that while an attempt was being made to introduce it in the west, it was exposed to extinction in the east, for the younger Turks, many of them, neglected its use. He explained that most of the so-called Turkish baths at present established here hardly deserved the name, and he then proceeded to describe, in very considerable detail, the various processes to which the bathers in Turkey and elsewhere were subjected, explaining also the bath as used by the ancient Romans, so far as this could be ascertained by the allusions to it in classical writings, and by the various architectural and other remains that have come down to us. He urged that it was a mistake to suppose that this was an expensive luxury, and pointed out that, according to a proper calculation of the cost of fuel and other necessities, these baths might be supplied to the poor as well as the rich at a very small cost. He appeared to be of opinion that the difference between the bath as used by the ancient Romans and the modern Turks was very slight—the latter, however, having introduced some details tending to greater decency and propriety. Speaking of the advantages of perfect cleanliness among all classes, the author pointed out that our intercourse with the lower orders was broken off by there being no settled occasions on which we are in contact with them, and by the want of cleanliness in their persons. In the bath, both classes were constantly brought into the presence of each other. Contempt and distaste were removed on one side, degradation and irritation on the other. He combated the impression that the bath is weakening, pointing out that those who are in the habit of taking it are strong and live to a great age. He related its marvellous effects upon himself when worn out by excessive fatigue; and concluded by pointing out its value as a remedial agent in the cure of many of the diseases to which the human frame is liable.

CHESTER ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY.

AT the fifth monthly meeting of this society the Rev. Canon BLOMFIELD delivered a lecture, "On the Laws and Customs of England in the Sixteenth Century, as they affected Trade, Commerce, and the Social Life of the Times," taking as his basis the revelations of an old black letter statute book of the reign of Elizabeth.

Some relics of Samian and other pottery found at the rear of God's Providence House, in Watergate-street, were exhibited by the architect, Mr. Harrison.

CHURCH, CHAPEL, AND SCHOOL BUILDING.

CHURCHES.

Leicester.—St. Andrew's Church.—This new church was opened on the 20th ult. It is erected from designs by Mr. G. G. Scott, and has been built by Messrs. Osborn Brothers, of Leicester. The ground plan of the building is cruciform, and consists of nave, transepts, and chancel with semicircular apse. It is built in the Early English style, almost entirely of brick, slightly relieved with Bath stone, which is introduced in the arches, the window sills, the weatherings of buttresses, the arcade round the exterior of the apse, and in various other parts of the building. The exterior is principally of red brick, ornamented with blue. The gables are coped with brick, with stone springers. The roofs are covered with Swithland slates, in diminishing courses. The two principal entrances are through a door at the west end and a porch on the south side; and there is also an entrance for children in the north transept. The view presented on entering the church at the west door is good, the rich soft colour of the bricks with which the walls are faced, and the lofty arches which divide the nave from the chancel and transepts, together with the complicated timbers of the roof, adding much to the general effect. Owing to the absence of pillars, the altar and pulpit can be seen from every part of the building. The nave is covered with an open-timbered roof of one span, the ridge of which is about 60 feet above the level of the floor. The principals, which are seven in number, form double arches across the nave, each arch with two parallel circular braces bolted together, the spaces being filled in with light cross braces to form a diamond pattern. These principals spring from shafts at the height of about 12 feet from the floor line. The roofs over the transepts are cross-braced. Wrought boarding covers the whole, and the timbers throughout have been stained and varnished. The nave is seated with open stalls of stained and varnished deal. The transepts are seated with movable benches. The stalls in the chancel are of more elaborate design. The church affords accommodation for about 960 persons. Provision is made for an organ in a chamber over the vestry. The pulpit, on the north side of the chancel arch, has a stone base, formed of a cluster of small octagonal shafts encircling the centre pillar. The upper part is of deal, carved with a simple ornament. The font is plain, and harmonises with the general character of the church. The floor is laid with red and black Staffordshire tiles in various patterns. The windows are glazed with cathedral glass, the circles in the upper portion of the nave windows being filled with ornamental designs. The chancel is lighted by a corona, by Skidmore, of Coventry, who has also supplied the standards in the nave, and the small corona which lights each transept. The entire cost of the building is, we believe, about £5,000.

Rutland.—Ketton Church.—The work of reparation is progressing. Mr. G. G. Scott is the architect. The pulpit is being carved by Mr. Irving, of Leicester. The tower is now reached by a turret staircase, erected on the site of a former one. In the early part of the present restoration a portion of a fresco was found on the north wall: it exhibited the figure of a bishop, and a church in the background; it has been entirely obliterated. One of the chamfered arches that support the tower is enriched with graceful foliage, the date of which may be ascribed as early as towards the close of the twelfth century; it is a very interesting example of artistic painting of the period. The Rev. P. H. Sutton has filled the lancet at the west end of the north aisle with stained glass; it exhibits four pictures, representing the Evangelists. The new central western window is in the Decorated style.

Worcester.—St. Mary's Church.—A stone reredos has just been erected in this church; the stone-work of a new east window is also completed, from the designs of Mr. W. J. Hopkins, architect to the Church Diocesan Society. The reredos is of Bath stone, in the usual arcaded form, there being three central compartments, with two others on each side. The central ones have trefoiled heads, with a quatrefoil over, and a crocketed canopy; but the side compartments are without canopies, a diapered ground and quatrefoils occupying the space between them and the cornice, the mouldings of the latter showing a row of ball-flowers. In the central compartment is the sacred monogram "I.H.S.," with the words "Do this in remembrance of me," and in those on either side respectively the dove and the triangle. The side arcades will contain the Commandments, the Creed, and the Lord's Prayer. In the quatrefoils, spandrels, and capitals of shafts, is some carved work. The new window is in the Decorated style, with three lights and flowing tracery. It is filled, by Messrs. Clayton and Bell, with the subject of the Ascension, the centre light being carried up higher than the side ones to admit the ascending figure of our Lord. Beneath are eleven Apostles and the Blessed Virgin. In the upper part of the tracery the three Angels, bearing the words "Pater," "Filius," and "Spiritus," and below are the evangelistic symbols.

Cambridge.—Barnell Church.—This building has been opened after undergoing considerable restoration. In the summer of 1860, the new roof of the church was re-leaded, many portions of the old timber removed, and the interior of the open roof, which ranks amongst the finest specimen of roofs of the fifteenth century, thoroughly restored. In the spring of 1861 the roof of the north aisle underwent the same complete restoration. In the same year the west arch was thrown open, and the tower thrown into the church. The columns and arches have also been restored and the paint and whitewash removed from every portion of the church. These, as well as other substantial works, have been carried out. The roofs have been re-leaded. The whole area of the nave and side aisles has undergone an entire restoration. The passages in the nave and side aisles have been laid with black and red Staffordshire tiles, and the other portions of the church have been filled up with oak seats of a uniform pattern, in harmony with the date of the building. The new pulpit and reading-desk, carved after the pattern of some portions of the old screen, which still remains, have been placed at the north and south side of the chancel arch.

Chester.—St. Mary's Church.—The long-desired improvement to this church—the raising of its tower—is now finished, as far as the masonry work is concerned. As contrasted with its former diminutive and insignificant height, and hidden, as it was, by the Castle walls, the new tower presents a striking appearance. The total expenditure for all the improvements and restorations which have been effected at St. Mary's will exceed £1,600.

Wilts.—St. Peter's Church, Marlborough.—A meeting was held on Thursday se'nnight to take into consideration the propriety of employing an architect to inspect the fabric of the church with a view to ascertain its present condition, and a resolution was unanimously carried:—"That Mr. Wyatt, the diocesan architect, be requested to inspect the fabric of the church, and report thereon."

Essex.—Coggeshall Church.—On the 11th inst. a meeting of the Committee for the restoration of this edifice was held to meet the architect, Mr. Christian, and to consider the question of repewing the building. Upon the recommendation of Mr. Christian it was decided that the organ should be removed to the north chancel aisle. It was also decided to repew the church with oak sittings. The expense is estimated at about £1,000.

CHAPELS.

Liverpool.—Norwood Independent Chapel.—The foundation stone of this chapel, now in course of erection, was laid on Tuesday se'nnight. The following sketch of the plan of the building is taken from the "Congregational Year Book":—"The style adopted is the Decorated Gothic, and the material of construction will be red sandstone, with Stourton stone dressings. The main entrance will be through two doorways, coupled under one arch, immediately beneath a four-light window, which from its design and size will form the principal architectural feature of the elevation. On either side of the entrance porch is a lofty turret, and the front is flanked on each side by semi-octagonal projections to contain the gallery staircases. In plan the building will consist of the entrance porch, opening into a spacious corridor, which will be divided from the chapel by a glazed screen of appropriate design. Doorways at either end will lead to the gallery staircases. The chapel itself is a parallelogram in form, with the pulpit or platform in advance of an apse, with groined ceiling. In the rear of the chapel, on the ground floor, will be large vestries, a ladies' room, and other apartments; and above these a lecture-room and library. The chapel ceiling is plastered, and in a vaulted form, with considerable space between it and the roofing. It is divided into bays by groined ribs springing from stone columns attached to the walls. In the construction of the fittings every attention will be paid to the comfort of the congregation, and the best means of securing perfect ventilation, heating, and lighting will be adopted. The chapel, when the galleries are completed, will contain sittings for from 850 to 900 persons. The cost of erecting the chapel, with vestries and lecture-room (but exclusive of the schools, which it is not proposed to erect at present), will be about £4,600. Messrs. Poulton and Woodman, of Reading, are the architects.

SCHOOLS.

Birmingham.—Lozell's Chapel Day Schools.—On Monday evening last this building was formally opened; it is built of brick with stone and coloured brick dressings. The principal room of the school is 60 feet by 25 feet, and connected with it is an infants' room, about 20 feet square. The school-room is surrounded by a spacious play-ground, which is fitted up with gymnastic appliances suited to children. Mr. T. D. Johnson, of Bennett's-hill, is the architect, and Mr. W. Bennett the builder.

Potters-bar, Middlesex.—An infant school has just been erected here at the sole cost of the Rev. H. G. Watkins, the incumbent, the site having also been presented by him. The school-room is 22 feet long by 15 feet wide, the height to the ridge being 22 feet. The roof is constructed of open timber, plastered between the rafters, which, with all the other internal woodwork, is stained and varnished. The porch is paved with Minton's tiles. A commodious residence for the mistress is attached. The external walls are constructed of picked stock brickwork with Bath stone dressings; a few red malms and white Suffolk bricks have been used. Bangor and Westmoreland slates in broad bands have been used for the roof, with ornamental ridge tiles. There is a bell turret, covered with zinc, and surmounted by a wrought-iron vane. Mr. E. H. Lingen Barker, of 30, Upper Berkeley-street, was the architect, and Mr. J. F. Williams, of Potters-bar, the contractor for the works, the total cost of which has been about £500.

Correspondence.

THE EXCLUSION OF FOUL AIR FROM DWELLINGS.

SIR,—Allow me to call your attention to that part of the discussion on "Healthy Dwellings" at the "Institute" last Monday week, when Mr. Rawlinson, of the Board of Health, expressed himself unable to compliment the architectural profession on the usual structural provisions of a sanitary tendency. While Mr. Rawlinson was making this statement, the letter I now beg to enclose was lying unacknowledged on the shelves of the Board.

If the Board of Health restrict itself to external drainage, and the letter did not, therefore, come within the scope of its functions, would it not have acted consistently in keeping its officers out of Windsor Castle?

Communication to the Board of Health, December, 1860, on the Ventilation of Drains, and the Exclusion of Foul Air from Dwellings.

The great and valuable attention directed to sanitary objects in recent times, not only in their general and leading bearings, but also in points of detail, encourages me to offer a suggestion for the perfect ventilation of house drains, and of preventing the escape of noxious gases into dwellings.

Very great advantage has unquestionably resulted from the modern practice of ventilating public sewers, and of securing out the whole of their contents by flushing them with large quantities of back water; but it is, nevertheless, a fact of daily experience, and quite beyond the necessity of demonstration, that vapours and gases of the foulest and most hurtful kind are ever ready to penetrate into the interior of every dwelling, and in a larger degree, perhaps, into those of the superior classes, which are more amply supplied with sinks and internal waterclosets.

From the public sewer a branch-drain is carried, it may be observed, into every house, to the different parts of which it ramifies, for receiving rain-water, and the waste from sinks and waterclosets. It is customary to place an effluvia-trap at the mouth of each branch-drain within the chief sewer, while at every inlet from the surface and from the sinks precaution is taken to prevent the efflux of foul air by the application of some form of stench trap. Still, from impurity in these provisions, carelessness or inadvertence in their use, a considerable quantity of foul air finds its way into most houses.

Another and a still more important source of such inconvenience is generally found in the waterclosets.

The great variety of apparatus of this kind shows its importance in a commercial point of view, and indicates the vast extent to which conveniences of this description are now applied, and (as it would also seem reasonable to suppose), the perfection to which the manufacture has been brought; and the small proceeding from waterclosets continues most perceptible, and the gases from which small arises most injurious to health.

If it be borne in mind that a soil pipe, usually of lead, conveys the contents of the closets into the drains, it will be seen that except the effluvia trap above referred to, which from its construction is hardly susceptible of very exact or perfect action, there is no obstacle to the passage of the foul air from the sewers until we come to the trap or apyon of the closet; and the soil pipe may thus be considered as a large reservoir of impure air, ready to escape upwards at every opportunity, and such opportunities appear to be afforded on every occasion when the closets are brought into action.

In recently carrying into effect a design for a dwelling house, convenience and economy induced me to have the soil-pipe extended upwards from the uppermost watercloset to the gutter, so as to receive the water from the roof, and act as a substitute for the ordinary stack-pipes.

I found here, that a most valuable and simple means had been accidentally acquired for affording the most perfect ventilation to all the drains of the house, there being an unchecked escape for light aqueous vapour and foul air into the open atmosphere above the house.

In cases where the rain water could not be conveniently conveyed to the soil-pipe, a smaller tube for ventilation carried above the roof or otherwise into the external atmosphere might be sufficient; or the object would be effected by terminating the soil-pipe in a flue similar to those for smoke, and rising to the same height.

Although it is a common rule with architects that no watercloset ought to be without a window opening to the exterior, an acquaintance with the arrangement of London houses shows the exceptions to so wholesome a regulation to be very numerous indeed; and, in such cases, the improved method of ventilation here pointed out, would, I presume to think, be of the utmost value.

There being neither proprietary or other exclusive interest or impediment connected with this plan, which has also the further advantage of being at once simple and economical, I feel that the supporting sanction of qualified judges can alone be necessary to secure its appreciation, and general adoption by the public.

THOMAS MORRIS.

Carlton Chambers, 12, Regent-street, S.W.

THE ROYAL ENGINEERS.

SIR,—The present time seems to me to be that for again drawing the attention of your readers to a public department which requires the searching eye of scrutiny in all its transactions, agitations of every legitimate kind, and the assistance of all who wish things to be done in a proper manner, to prevent its gradually settling down into (if nothing worse) what has been so justly termed its "present anomalous position." I allude to the Royal Engineer Department.

About and before this time last year, scarcely a week passed without a letter appearing in the BUILDING NEWS referring to this subject. I myself was favoured by you, and, therefore, again take the liberty of asking for space for the insertion of this letter.

The advocates of a change in or re-modelling of the Royal Engineer Department have received the most valuable assistance from a source whence least expected—from an officer of Royal Engineers (in spite of himself he is betrayed), who, in the January number of Colburn's *United Service Magazine*, exposes more than could have been possibly expected from any criminal, however repentant and conscientious.

We there see, in all its hideousness, an admission of incompetency the most complete, of waste of public money the most enormous, of injustice to civil officers the most glaring, and, at the same time, assurance the most unblushing. We find that the corps of Royal Engineers have been drawing, in pay and allowances from the National Exchequer, thousands of pounds which they have never earned; that they have been in positions of authority and power, and vested with the expenditure of public money on works and buildings, without having the experience necessary to qualify therefore; that they have hitherto effectually persuaded the authorities that they were the *élite* of the department, instead of the millstone hanging about its neck; and yet after doing this, and much more, have the hardihood and assurance to ask for another lease of sinecure, another trial in a deception still more deceptive, to break down in a more deplorable manner than has the present system, because on a more extensive scale; and as for their position before the country was not sufficiently pitiable after such confessions, they make it still worse by throwing calumny and scandal on those without whom they would not have maintained their positions up to this time, and endeavour by so doing to hoist themselves into what I just now termed another trial in deception. Let us hope that no one will fall into the snare; or when it comes to "paying the piper," it will be found that the tune has been a dear one.

The writer in Colburn's Magazine evidently wrote for the information of the military, not caring to appear in any other garb, with his "architects," "surveyors, and civil engineers," creatures of a year, as a contrast to those of "less than a month," and in either case equally ridiculous—with his insult to the professions by any such terms being applied to what such periods could afford; and not even satisfied with this, but endeavouring to insinuate that the professions of architect, surveyor, and civil engineer, are not only to be acquired by any one who may be fortunate enough to obtain admission at Chatham as a Royal Engineer Officer in twelve months (hitherto one month) but also that soldiers are to be manufactured from the rough stone into a polished gem by a curriculum which he is pleased to designate a course in practical architecture, &c.

Truly these professions are coming to something, other than desirable if this is the case; I need not, however, add, that the ignorance of the engineer officer in everything pertaining to them must be marvellous, or he would never have ventured on so palpable an absurdity, which forcibly reminds me of the caution my father once gave me, "Don't play with edged tools till you know how to use them, for in unskilful hands they frequently injure those who attempt to use them."

The whole article is a compound of despair, ignorance and malevolence; despair at the state to which the corps has arrived—that some change or other must be made, and that this change will most likely affect them very seriously in two most important points, pocket and position, and consequently imploring a prolongation, if not a permanent settlement of what they have so long held, at whatever sacrifice of that right principle which should possess every man—that he gives money's worth for the money he receives; and although accompanied by such a confession as that walled forth, it requires no great stretch of imagination to picture to one's self the state of things which would cause even an officer of engineers to break forth into such lamentations, specious pleading, and betrayal of despair.

Ignorance (partially assumed) of the best thing to be done under the circumstances. I say assumed, because any man who has made such a confession of past inefficiency cannot possibly lack the discrimination to perceive that a remedy is to be found in removing the inefficient and making room for the efficient. Ignorance, also, of other men in imagining that they would take to any scheme proposed by a culprit, simply because he has made a partial admission of guilt and given a promise to behave better in future. Ignorance, also, of what he would wish to appear very conversant with, i.e., the necessary education and practice, in addition to inclination, to qualify for even a very trifling insight into civil professional knowledge and duties.

Malevolence, inasmuch as no other motive could have instigated any man to publish such a calumny as that which is implied against the civil officers of the department. Why did not the writer specially allude to cases, instead of, by implication, calumniate a body of men upon whom, and whose honesty and integrity, he has so frequently been dependent, and whose characters will bear as much inquiring into as will those of the officers of the corps of which he himself may be a member. If such black sheep exist, and he knows them, he has been guilty of a gross dereliction of duty in not bringing the matter to the notice of the authorities, because such men should not be allowed to remain in any department so honorable, although so ignored, as the Royal Engineer Department. It is not so. It is that if, even by calumny and slander, under the shelter of the calumnistic tree, he can gain, or

even advance, his point, he will try those means. I do not envy him his reflection, neither the chance he has of, after having "sown the wind," his "reaping the whirlwind."

With your permission I will on a future occasion advert to this subject, and endeavour to afford some little information on the details of the scheme, as also on the most important principle in connexion therewith, viz., the expense attendant on the introduction of what, without the slightest evidence of its being so, is termed "a self-supporting scheme."

P. ETARD.

February 25th, 1862.

TENDERS.

OFFICES, DARLINGTON.
For the erection of offices in connection with the New Engine Works at Darlington, for the Stockton and Darlington Railway Company. William Peachey, architect.

For the Whole.

Appleby and Carter.....	£2,839 15 0	Hurworth (accepted)	£2,153 17 1
Bell.....	2,570 0 0	Windall and Son.....	2,127 0 0
Bulmer.....	2,403 14 0	Hodgson.....	2,125 0 0
Cockburn and Bridges.....	2,329 11 7	Abdale and Kemp.....	2,109 12 0
Robson.....	2,228 17 3	Elwin.....	2,103 0 8

Bricklayer, Mason, and Plasterer.

Hodgson.....	£990 11 0	Watson.....	£926 17 4
Marren.....	951 6 5	W. Robson and Son.....	860 0 0
Graddon.....	939 11 5		

Slater.

Wharton.....	£154 12 9	Atkinson and Son.....	£147 10 0
Preston.....	150 0 0	Graddon.....	147 10 0
Watson.....	147 10 0	Pattison.....	139 0 0

Carpenter and Joiner.

Graddon.....	£827 0 0	Robinson.....	£658 0 11
Snath.....	745 14 9	Armitage.....	578 7 6
Watson.....	670 9 4		

Plumber, Gasfitter, and Glazier.

Laidler.....	£393 0 0	Russell and Sons.....	£323 15 11
Graddon.....	391 10 0	Marshall.....	320 11 0
Hind and Son.....	359 0 0	Woods.....	320 0 0
Watson.....	345 0 0		

Bellhanger.

Harrison..... £5

Painter.

Watson.....	£72 17 4	Dryden.....	£58 0 0
Walker.....	62 12 0	J. R. Wilson.....	58 0 0
J. Wilson.....	60 15 3	Blyth and Mossom.....	55 0 0
Garthwaite.....	58 0 0	Galenby.....	54 0 0

PASSENGER STATION, YORKSHIRE.

For the erection of passenger station at Saltburn-by-the-Sea, Yorkshire, for the Stockton and Darlington Railway Company. Mr. William Peachey, architect.

The Whole.

Graddon.....	£4,498 8 1	Elwin.....	4,206 15 0
T. Robson.....	4,411 2 3	W. Robson and Son.....	4,177 1 0
Franco.....	4,342 13 6	Marren.....	3,852 16 6
Cockburn and Bridges.....	4,225 7 0		

Bricklayer, Mason, and Plasterer's Work.

Kellett and Sons.....	£2,971 0 0	Pearson (accepted).....	£1,796 4 11
Funshon.....	2,335 3 10	Abdale and Kemp.....	1,631 10 0
Franco.....	1,847 13 6		

Slating.

Butterwick.....	£293 19 10	Wharton.....	£276 13 6
Preston.....	284 14 0	Ord and Sanderson (accepted).....	276 10 0
Pattison.....	280 0 0		

Carpenter and Joiner.

Robinson.....	£920 0 11	Butterwick.....	£795 18 11
Kellett and Sons.....	909 0 0	Chapman (accepted).....	770 0 0
Armitage.....	105 15 6	Wilkinson.....	698 0 0

Plumber, Gasfitter, and Glazier.

Laidler.....	£537 2 0	Russell and Sons (accepted).....	442 5 5
Butterwick.....	499 3 1	Woods.....	399 10 0
Hudson.....	468 9 7		

Smith and Ironfounder.

Head, Ashby, and Co.....	£939 8 11	Close, Ayre, and Nicholson (accepted).....	£726 2 0
Darlington Forge Co.....	834 0 0		

Painter.

Watson.....	£149 15 6	Wilson.....	£100 0 0
Butterwick.....	120 5 4	Gatenby (accepted).....	96 6 1
Blyth and Mossom.....	115 10 0	Guy.....	72 12 4
Walker.....	114 2 7		

DWELLING-HOUSES, &c., SALT BURN.

For the erection of two dwelling-houses and shop at Saltburn-by-the-Sea, Yorkshire, for Mr. Robert Moore. Mr. William Peachey, architect.

For the Whole.

W. Robson and Son..... £1,370 13

Bricklayer, Mason, and Plasterer's Work.

Thompson (including slating).....	£787 3 0	Robinson and Marshall.....	£622 0 0
Pattison and Son.....	772 10 4	Massey (including slating).....	612 2 8
Hodgson (including slating).....	675 5 4	Belt.....	591 14 8
Pearson.....	627 8 5	Marren (accepted).....	562 12 8

Slating.

Butterwick.....	£45 3 3	Pattison.....	£43 15
Preston.....	44 5 6	Wharton (accepted).....	42 0
Ord and Sanderson.....	43 15 0		

Bellhanger.

Close, Ayre, and Nicholson.....	£23	Harrison (accepted).....	£18 16 3
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Carpenter and Joiner's Work.

Windall and Son.....	£577 0 0	Massey.....	£472 13 5
Wilkinson.....	576 0 0	Herbert and Conl.....	472 13 5
Brown.....	520 0 0	Kitching (accepted).....	460 19 0
Watson.....	480 14 10	Butterwick.....	454 9 6
Chapman.....	474 0 0		

Painter.

Butterwick.....	£55 7 7	Guy.....	£41 1 0
Walker.....	48 18 0	Watson.....	39 10 0
Brown.....	45 0 0	Tomkins (accepted).....	36 5 0

Plumber and Glazier's Work.

Butterwick.....	£165 16 3	Laidler.....	£152 5
Russell and Sons.....	155 0 4	Woods (accepted).....	132 0

Smith and Ironfounder.

Close, Ayre, and Nicholson.....	£90 5 6	W. Wray and Co. (accepted).....	£70 17 2
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CHURCH, PEMBROKESHIRE.

For the repair and restoration of the parish church of Nevern, Pembrokeshire. Mr. Withers, architect.			
Jenkins, Thomas and Davies.....	£1,585 0	C. J. Davies.....	£1,123 16
Stone and James.....	1,182 11		

COTTAGES, MARSKE.

For the erection of a pair of cottages at Marske, Yorkshire, for the Stockton and Darlington Railway Company. Mr. William Peachey, architect.

The Whole.

Thompson.....	£590 9	Pearson (accepted).....	£439 11 6
Franco.....	446 1	Robson and Son.....	432 10 0
Elwin.....	442 18	Massey.....	430 18 0

Bricklayer, Mason, and Plasterer's Work.

Patton.....	£263 7 9	Belt.....	£207 16 0
Pearson (accepted).....	211 5 11		

Slater.

Butterwick.....	£42 0	Wharton.....	£39 14
Preston.....	41 10	Ord and Sanderson.....	38 0
Pattison.....	40 0	Pearson (accepted).....	35 10

Carpenter and Joiner.

Braithwaite and Son.....	£160	Wilson (accepted).....	£126 10
Butterwick.....	142	Pallister and Evans.....	126 0
Wilkinson.....	136	Brown.....	120 0

Plumber and Glazier.

Braithwaite and Son.....	£35 15 0	Tomkins.....	£25 14
Butterwick.....	30 15 0	Woods (accepted).....	21 10
Hudson.....	26 13 8		

Smith and Ironfounder.

Braithwaite and Son.....	£30 7 0	Pearson (accepted).....	£17 10
W. Wray and Son.....	28 15 7		

Painter.

Braithwaite and Son.....	£20 6 0	Gatenby.....	£13 10
Walker.....	15 18 10	J. and J. B. Wilson (accepted).....	12 0
Tomkins.....	15 2 0	Brown.....	7 5
Watson.....	14 19 6		

WAREHOUSES, LEEDS.

For the erection of three woollen warehouses in Leeds, for the King-street Warehouse Company. Quantities taken out by J. Wright, Hull. Cuthbert Brodbeck, architect.

Nell, Bradford.....	£5,700 0	Thorp, Leeds.....	£7,485 18
Longley, Leeds.....	8,546 0	Adly.....	7,450 0
Thornton, Bradford.....	8,200 0	Boothman, (accepted).....	7,135 0
Nichols, Leeds.....	7,700 0		

And 39 separate tenders, the lowest of each amounting in the aggregate to £7,170 18s.

MARKET, CHESTER.

For erecting a new market, Chester. Messrs. W. and J. Hay, architects, Liverpool. Quantities taken out by Mr. Sherlock.

Meakin.....	£8,714 1 6	Noill.....	£7,320 0 0
Thomas.....	8,464 0 0	Lockwood and Farrimaud.....	7,274 0 0
Barker.....	8,049 19 1	Hughes.....	7,145 0 0
Lovatt.....	7,843 10 0	Stap.....	6,995 0 0
Hitchin.....	7,690 0 0	Roberts (accepted).....	6,440 0 0
Mabon.....	7,615 0 0		

REBUILDING, LONDON.

For rebuilding 57 and 58, Rathbone-place, for Messrs. Parkins and Gotto. Mr. S. C. Capes, architect. Quantities supplied by Mr. B. A. C. Herring.

Carter.....	£2,885	Browne and Robinson.....	£2,450
Sanders.....	2,558	Batterbury.....	£2,379

PRINTING OFFICE, CHANCERY-LANE.

For erecting a new printing office, Church-passage, Chancery-lane, for Mr. Frederick Chiffierell. Mr. Alfred Smith, architect.

Foster.....	£1,095 0 0	Cannon.....	£945 0 0
Cills.....	1,037 0 0	James and Ashton.....	933 0 0
Fowler.....	987 0 0	Brass.....	930 0 0
Woodward.....	964 0 0	Abbot and Hopwood.....	902 0 0
Snds.....	958 18 11	Macey.....	883 0 0
Corder.....	946 0 0	Sewell and Son (accepted).....	867 0 0

LODGE, ESSEX.

For the erection of Witham-lodge, Essex, for Mrs. W. W. Luard. Mr. Fred. Chancellor, architect, 25, Old Broad-street, London.

Cushing.....	£2,270 0 0	Gardner.....	£1,975 0 0
Winfield.....	2,264 16 6	Palmer.....	1,963 0 0
Todd.....	2,094 0 0	Wood.....	1,885 0 0
Brown.....	2,010 0 0	Stephenson.....	1,825 0 0
J. W. Sawyer.....	1,994 0 0	Glasscock.....	1,800 0 0

COMPETITIONS OPEN.

BRIDGES.

DUBLIN.—The committee appointed to carry out the new Carlisle bridge (Dublin) scheme, require plans and specifications for the erection of the structure on the present site, the full breadth of Sackville-street, £200 will be paid for the best and most approved plan, £100 for the second, and £50 for the third. The plans, &c., to be the property of the committee, to whom applications are to be made at the Imperial Hotel, Sackville-street, Dublin.

HARBOR WORKS.

LYME REGIS.—The Borough Council require a plan, specification, and estimate for carrying out certain works at the Cobb or harbor there; to be sent in to G. Hingerton, town clerk, by March 1st, when the successful competitor will receive 15 guineas. Full particulars can be had at the offices of the Cobb clerk or town clerk, Lyme Regis.

LAYING OUT.

TRAMMERE.—The directors of the Trammere Freehold Land Society desire plans, before the 25th March, for laying out and allotting the estate belonging to the Society, in Higher Trammere; consisting of about 40 statute acres. Premiums will be given for the best and second-best plans. Each plan to be accompanied with an estimate of the cost of the formation and construction of the roads and sewers, and also of the laying out of the land. Particulars from Mr. John Quinn, Chairman of the Society, 22, Lord-street, Liverpool; or from Mr. H. P. Priest, Secretary, Market-cross-chambers, 19, Market-street, Birkenhead.

CONTRACTS OPEN.

PAVILION.

WORCESTER.—For the erection of a pavilion, to be constructed of wood and glass, for the Worcester Pleasure Grounds Company, Limited. Plans, &c., at the offices of Mr. A. P. Watkins, 50, Foregate-street, Worcester, and bills of quantities obtained of the architect, Mr. Cranston, No. 1, Temple-row-west, Birmingham. Tenders to be sent to the secretary, endorsed "Tender for Pavilion," on or before the 8th March.

PIER.

BLACKPOOL.—For the erection of an iron landing and promenade pier, for the Blackpool Pier Company, (Limited.) Plans, &c., on Monday the 3rd March next, at the office of Messrs. Birch, the engineers to the company, 43, Parliament-street, London, S.W., or at the Company's office, Blackpool; and bills of quantities will be furnished on payment of ten shillings. Sealed tenders by the 10th March next, addressed to the chairman of the Blackpool Pier Company, Blackpool.

CHURCHES.

BIDEFORD.—For rebuilding Bideford Church. Plans, &c., on application to the rector, till the 3rd March. Sealed tenders addressed to the secretary, on or before March 10th.

WAKEFIELD.—For the erection of a new parish church, at Ossett, near Wakefield. Plans, &c., with W. Henry Crossland, architect, Harrison-road, Halifax, to the 28th inst. Sealed tenders, endorsed "Tender for the New Parish Church, Ossett," to be delivered to Mr. Crossland, on or before 3rd March.

PRESTON.—For the erection of the whole or any portion of a new church, to be built at Preston. Plans, &c., at the Upper School-room, Wellfield-road, Preston, and also at the office of the architect, Mr. E. G. Paley, Lancaster, to 18th March, inclusive. Tenders to be sent in under cover to the Rev. Thomas Clark, West Cliff-terrace, Preston, endorsed "Tender for St. Mark's Church," on or before March 22.

CHAPELS.

BRISTOL.—For the erection of the Clifton Wesleyan Chapel. Drawings, &c., with Fosters and Wood, architects, 6, Park-street, Bristol, till the 28th inst., on or before which the tenders are to be sent to the architects, sealed and endorsed "Tenders for Clifton Wesleyan Chapel."

BRADFORD.—For the erection of the new Baptist Chapel, Manningham-lane, Bradford. Drawings, &c., at the school-room of St. John Chapel, Bradford, Yorkshire. Tenders for the whole or parts of the works will be received up to 10 o'clock on March 8th.

CROYLAND.—For the erection of a new school-room and additions to the Wesleyan Chapel, Croyland. Plans and specifications at Mr. Sanderson's, chemist, Croyland, where tenders to be addressed to and delivered on or before the 1st March.

GLOUCESTERSHIRE.—For the erection of two chapels and entrance lodge and gates for Painswick Cemetery, Gloucestershire, and for laying out the grounds and fencing. Plans, &c., on application to the Rev. A. J. Biddell, vicar of the parish. Sealed tenders (separate) to be addressed to the Rev. A. J. Biddell, and sent in before 11 o'clock on the 5th March.

PETERBOROUGH.—For the erection of a new Primitive Methodist Chapel and School-rooms. Tenders to the Rev. J. Ashworth, Hampden-street, Boonfield, Peterborough, by March 11. Plans, &c., with Mr. Robert Lee, Millfield, near Peterborough.

VICARAGE.

MONMOUTHSHIRE.—For the erection of Caerleon Vicarage-house, three miles from Newport, Monmouthshire. Plans, &c., at the King's Head Hotel, Newport; and tenders may be sent to Pritchard and Seddon, diocesan architect, 6, Whitehall, London, on or before the 15th of March.

PARSONAGE.

PERTH (N.B.).—For the erection of a new manse and office, at Dunning, Perth, N.B. Drawings, &c., with the architects, William G. Habershon and Pite, 38, Bloomsbury-square, London; and on application to the clerk of works (Mr. Jones), at Dancrub-park, Dunning.

COTTAGES, &c.

SOUTH DEVON RAILWAY.—For the erection of twenty-five cottages and a block of flats, at the Newton station, on this line. Drawings, &c., with Mr. Rowell, architect, Station-road, Newton Abbot; and tenders are to be sent to P. J. Margary, engineer's office, Dawlish, on or before the 8th March. Printed copies of the specifications and conditions of contract will be supplied to the contractors at a charge of 10s.

ALTERATIONS.

MAIDSTONE.—For certain alterations and repairs to a house in the West Borough, Maidstone adjoining the railway station. Plans, &c., with Mr. Bulmer, architect, Maidstone, any day except Sunday, between 10 and 5, where bills of quantities may be obtained on payment of 5s. Sealed tenders, endorsed "Tender for Alterations to House," are to be delivered at Mr. Bulmer's office on or before the 5th March.

RAILWAY WORKS.

IRELAND.—For the construction of the works upon the Midland Counties and Shannon Junction Railway, between Clara and Banagher, and commencing at a point a mile and a half from the Junction of the Midland Great Western and Great Southern and Western Railway Companies, on to Banagher, a distance of about 17½ miles. Plans, specifications, quantities, &c., are to be seen with the engineers of the Company, John Hill, Esq., Tullamore, and Henry Brett, Esq., 8, Harrington-street, Dublin. Tenders to be sent in not later than the 8th March, at 12 o'clock noon, endorsed "Tender for Works," and addressed to J. Fowler Nicoll, secretary, offices of the Company, 53, Lower Dominick-street, Dublin.

BRIDGES.

BOLTON.—For the erection of a timber bridge across the river Irwell, at Agecroft-bridge. Plans and particulars at Mr. A. Pilling's, Contractor's office, Davenport-terrace, Bolton.

LEICESTER.—For the cast-iron girders and parapet, and the wrought-iron work required for a bridge of 40 feet span to be erected over the river Soar, at Leicester. Drawings, &c., with E. L. Stephens, Borough Surveyor, Local Board of Health offices, Silver-street, Leicester, and the tenders for the same, including delivery and fixing, are to be sent in not later than the 12th March, endorsed "Tender for Ironwork," addressed to the Chairman of the Highway Committee.

WATERWORKS.

WELCHPOOL.—For laying and jointing about 6,500 yards of cast-iron pipes, and for providing and fixing sluice cocks, hydrants, and other works, for the Welchpool Waterworks. Specifications, &c., may be obtained of Messrs. Robert Dymond and Sons, surveyors, Exeter, at 10s. 6d. each. Tenders by March 10.

LEITH (N.B.).—For executing repairs on the water-house of Lochend Loch, cutting pipe tracks, &c.; also for furnishing and laying about 300 lineal yards of cast-iron pipes, 9 inches diameter, and furnishing and fitting-up sluice and scouring-cocks, air-cocks, &c. Plans, &c., with Mr. Paterson, C.E., 20, St. Andrew-square, Edinburgh. Offers endorsed "Tender for Waterworks," to be lodged with Mr. Anderson, Town Clerk, Leith, on or before 13th March.

MILITARY WORKS.

SCOTLAND.—For contracting from 1st April, 1862, to 31st March, 1863, inclusive, for the performance of such artificers' work as may be required at the under-mentioned stations, viz.:—Edinburgh Castle; Piershill Barracks; Leith Fort, Martello Tower, and Blackness Castle; Greenlaw Military Prison and Barracks; Perth Barracks; Dundee Barracks and Broughty Castle; Dunbar Barracks; Berwick and Holy Island; Glasgow Barracks; Dumbarton Castle; Paisley Barracks; Hamilton Barracks; Ayr Barracks; Fort Matilda; Stirling Castle; Aberdeen Barracks, Beach and Torry Point Batteries; Forts George, Augustus, and William. In all cases, the seven trades are to be in one tender for each station, and the contracts to be determinable at any period after the first year, on either party giving to the other three months' notice in writing. Any person may tender for one or more of the above stations. Parties applying for forms of tender must give sufficient guarantee to the entire satisfaction of the commanding royal engineer of their being fully competent to undertake and execute any new works or repairs that may from time to time be ordered on the contract schedules. Every information on application to the Royal Engineer or Barrack offices, at the several stations herein named, together with printed schedules of the prices, with the terms of contract and letter of tender for the several descriptions of artificers' work, to the 27th February, upon making a deposit of five shillings for the same. The letter of tender to be sealed, and transmitted under cover to the Director of Contracts, War Department, Pall-mall, London, S.W., so that it may be received on or before the 10th March, 1862, and to be marked on the left-hand corner of the envelope, "Tender for Works at ———."

WOOLWICH.—For executing the work, &c., that may be required in the following trades, for the period from the 1st April, 1862, to the 31st March, 1863, viz.: bricklayers, masons, paviors, carpenters, plasterers, slaters, plumbers, smiths and ironfounders, painters, glaziers, and paperhangers, and gasfitters. Parties desiring to tender to leave their names at the Royal Engineer Office, Woolwich, on or before 8th March, and pay 7s. 6d. for schedules and forms of tender.

DUBLIN.—For the performance of such artificers' work as may be required at the under-mentioned stations, from the 14th April, 1862, to 31st March, 1864, inclusive, viz.:—Dublin District, as per schedule B, Athlone, with 5 per cent. in addition for rifle range; Mullingar, with 8 per cent. in addition for rifle range. The contracts to be determinable at any period after the first year, on either party then giving to the other three months' notice in writing. Information to be had at the District Royal Engineers' Office, Dublin, and at the Royal Engineers' Office, Athlone, or to the Barrack Master at Mullingar; and printed schedules of prices, with terms of contract and letter of tender, may be had on

depositing 10s. Tenders sealed to be transmitted under cover to "The Director of Contracts, War Office, Pall-mall, London, S.W.," marked on the outside "Tender for Work at Athlone or Mullingar" (as the case may be), before March 15th.

ROADMAKING, &c.

IRELAND.—For the following works, in the barony of Gorey, in the county of Wexford:—1.—For making a new line of road from the corner of the Post-office in Gorey, to Edward Foley's cottage in Ballyraheen, containing about 415 perches; not to exceed £500. 2.—For making a new line of road from Gorey to Tinahely, containing about 300 perches, in the townland of Ballingarry. Plans, forms of tender, &c., obtained, at the office of Henry E. Wynne, secretary to the Grand Jury, County Court House, Wexford.

PAVING, &c.

NEWINGTON.—For the supply and doing of such paving and curbing to the extent, as to paving, of about 60,000 feet super; and, as to curbing, to the extent of about 14,000 feet lineal; and also for the supply of such broken granite (Guernsey, Bombay, and Port Phillip), flints, Kentish rag, gravel, and smith's work, as the vestry of St. Mary, Newington, Surrey, may require of the contractor, from the 25th March next until the 25th March, 1863. Particulars, &c., with H. and F. Chester, joint clerks to the Vestry, 1, Church-row, Newington-butts, to whom tenders must be sent before 6 p.m. on the 10th March, and the several persons willing to contract must attend the Committee at 7 o'clock on the same evening.

BRIDGE.

BRISBANE RIVER.—The Municipality of Brisbane are prepared to receive designs and tenders for the construction of a bridge over the Brisbane river, at Brisbane, the capital of Queensland. The author of the best design, at the lowest cost, will receive a reward of £150, or be employed to carry the work out, providing he furnishes sufficient proof of his competency and experience in similar undertakings. A premium of £80 will be awarded to the next best design, and £40 for the next best. The plans, specifications, and estimates of the first and second designs will be retained by the Corporation as their property. The remainder will be returned to the competitors; but the corporation will incur no responsibility as to their safe delivery. Each set of drawings, and the documents accompanying them, are to be distinguished by a motto only, and accompanied by a letter in a sealed envelope, marked with the same motto, and containing the author's name and address, and such testimonials as he may think proper to furnish. Professional judges, being non-competitors, will be appointed by the Corporation to determine the merits of the respective designs. Eligible tenders for the work, accompanying the design, will be entertained. All drawings and tenders to be delivered at Gresham House, on or before the 15th of March next. Copies of the instructions to competitors, and the plan of the city, can be obtained of F. Mangles and Co., the Colonial agents, and agents to the Municipality of Queensland, 86 to 88, Gresham House, Old Broad-street, London, E.C.

SEWERAGE, &c.

OXFORD.—For constructing an open sewer along a portion of the Trill Mill Stream in the city of Oxford. The drawings, &c., at the Commissioners' office, Town Hall, Oxford; or particulars obtained from Mr. John Galpin, surveyor. Tenders, on printed forms, which may be obtained either of the clerk or the surveyor to the Commissioners, must be delivered, sealed, to Frederick J. Morrell, clerk to the Commissioners, No. 4, St. Giles's-street, Oxford, on or before twelve noon, on 10th March, endorsed "Tender for Open Sewer."

HANTS.—For laying pipes, erecting filter tanks, and executing other works for the drainage of the town of Alton. Copies of the quantities, with forms of tender (price 2s. 6d. each) may be obtained, and the specifications and drawings inspected, on application to William Trimmer, clerk to the Board, Alton; or to Mr. T. W. Penfold, 2, Charlotte-row, Mansion-house, London. Tenders to be sent in on or before 4th March.

ROTHERHAM.—For the execution of such drains as the Vestry may direct to be performed in the parish of Rotherhithe. Printed forms of tender and schedule of works, with conditions, may be obtained at the clerk's offices, 61, Paradise-street, Rotherhithe; or of Mr. George Legg, the surveyor, 61, King William-street, London-bridge. Tenders, accompanied with the name of one responsible person as surety, to be sent to the clerk's offices on or before 12 o'clock on the 4th of March.

ROTHERHAM.—For supplying, for the use of the Vestry of the parish of Rotherhithe, Guernsey granite spalls, York paving, half-sovereigns for carriage paving, curb, &c., for one year, to be delivered alongside wharf at Rotherhithe. Forms of tender and schedule of articles to be supplied may be obtained at the clerk's office, 61, Paradise-street, Rotherhithe. Tenders to be sent to the clerk's office by 12 noon of the 4th March.

ISLINGTON.—For the day and jobbing works in connection with the construction and repairs of sewers and gullies, in the parish of St. Mary's, Islington. The form of tender and contract, which slons will be received, may be had at the Vestry offices, Upper-street, Islington, on payment of 2s. 6d. Sealed tenders must be sent in on or before 10 o'clock on March 12th.

DUMFRIES.—For constructing and completing a main sewer and its appurtenances, in the White Sands, Dumfries. The sewer will be about 500 yards in length, and to be built of bricks with fire clay invert blocks. The section, &c., with James Barbour, C.E., Buccleuch-street, Dumfries; and tenders to be lodged with William Martin, town clerk, on or before 20th March.

DRAINAGE, &c.

SURREY.—For the execution of road making and road drainage on the Conservative Land Society's estate, at Roehampton, Putney, Surrey. The following rough quantities are stated in order to indicate approximately the extent of the proposed works, but parties tendering will have to take out quantities for themselves:—New roads 40 wide, including footpaths, 2,350 feet run; 9-inch drain pipe, 1,820 feet run; 6-inch drain pipe for gullies, 220 feet run; No. 20 gully cesspools with gratings. Plan, &c., at the office of the Society's surveyor, Mr. James Wilson, 33, Norfolk-street, Strand, W.C.; to whom tenders, endorsed "Tender for works at Roehampton," before March 8th.

SUPPLY, &c.

LONDON.—For the supply of materials and the execution of the day jobbing and measured works of the Metropolitan Board of Works, in respect to the main sewers and incidental works within the limits indicated upon maps deposited at the office of the Board, Spring-gardens, S.W. Tenders must be made separately for each of the areas shown upon such maps—viz.:—Area coloured pink and marked A, area coloured yellow and marked B, area coloured yellow and marked C. Tenders to be upon the bases of schedules of prices, and to be made for alternative periods of one, two, or three years. Parties desiring to tender may, upon payment of 5s., obtain printed forms, with general conditions, on application to Mr. J. W. Bazalgette, Engineer of the Board, at the office of the Board. Each tender to include neither more nor less than one of the coloured divisions upon the maps, and is to be endorsed "Tender for works in the ———" (the description of the area to which the tender is to apply being inserted). Sealed tenders must be delivered at the office of the Board on or before the 6th March, at 4 p.m. The parties tendering must be in attendance at the Board at 12 o'clock on the 7th March.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient. J. T. S. E. D., O. W. H. C., A. T. E. R. B., T. W., W. J. O. F. C. E., H. B., E. E. R. J. C., H. K., D. I., L. F. E. Z., E. B. R., W. G., G. T., F. Y. P., D. W. (Southport), A. G. (Oswestry), Subscriber, C. R. A. F., Z. A. C., G. E., T., Theodolite.—Next week.

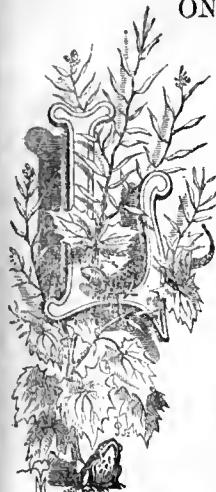
NOTICE.

The Seventh Volume of the BUILDING NEWS is now ready, bound in cloth, price 21s. Subscribers can have their copies bound, either with or without the advertisement page, for 4s. 6d., on sending them to the office. Cases ready for binding the volume may be had price 2s. each.

* * * All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old Bowell-court, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 18 to 21, Old Bowell-court.

Advertisements are received up to six o'clock on Thursdays.

STRAND IMPROVEMENTS.



LONDON'S great artery of traffic—the link between the commerce of the City and the fashionable life of the West-end—is on the eve of undergoing considerable change by the realisation of two projects which, it is said, will be shortly commenced. We allude to the proposed Temple-bridge, and to the new hotel that is to be erected on the site of Lyon's-inn, and to the new Courts of Justice. Any fresh appropriation of the localities would be an improvement—architectural quite as much as social and moral. But, before endeavouring to forecast the results of the new works, and their influence in widening channels for traffic, let us take a glance backwards, with Mr. Peter Cunningham and Mr. John Saunders for our sure, erudite, and pleasant guides, at the old features of the Strand and so much of Fleet-street as will be affected by the contemplated alterations.

Temple-bridge is to start from the foot of Essex-street, and cross the river to Princess-street, Upper Stamford-street—one of the sites reported on by the Select Committee of 1854 as

requiring bridge accommodation. The structure is to be similar to the one being erected at Lambeth, and is to be by the same architect or engineer, and contractors. The spans are to be 300 feet; and the total cost £45,000—not a twentieth part of the cost of its neighbour, Waterloo-bridge. Essex-street, which is to be the approach to the site of the new bridge, is part of a site that has been illustrated by some of the most startling and romantic incidents of English history. It formed part of an outer temple wherein was one of the residences of knights. From their hands it passed into the possession of the Bishops of Exeter, and the old structure became their episcopal residence in London, whence the title of Exeter House. No less than nine bishops had their inns in the Strand, from the motive given by Selden, that their persons were held sacred, and they consequently had no cause to fear for their safety, while others were compelled, for the sake of security, to live within the City. One of the episcopal inhabitants—Miles Stapleton—who improved the edifice, was beheaded in Cheapside by the mob, because he was a friend of Edward II.; the corpse was buried beneath a heap of rubbish in front of the palace door. From the Bishops' possession Exeter House passed into the hands of Lord Paget at the Reformation; next to the Duke of Norfolk—to that duke who purchased and in part rebuilt the Charter House, who meditated marriage with Mary Queen of Scots, and who was beheaded on Tower-green for treason; then to Queen Elizabeth's first favourite—Leicester—and from his nephew, Sir Robert Dudley, to the most unfortunate of all the Virgin Queen's favourites, Robert Devereux, Earl of Essex, who gave it its last title, Essex House. When it was known as Leicester House, it had sheltered Spenser, and Sir Nicholas Throgmorton died there, poisoned, it was rumoured, by the Earl. When Essex returned from Ireland, which he called the "cursest of all islands," and whither the Queen, after boxing his ears, had him "Go and be hanged," his house was thrown open to the disaffected and enterprising, and a strong party of his old officers took up their lodgings about Essex House, forming themselves into a guard and council. The popularity of the Earl with Londoners overshadowed and gave umbrage to the Crown, and encouraged him to attempt to forcibly remove from Court his enemies, including Sir Walter Raleigh and Sir Robert Cecil—Sheridan's Burleigh, that "shook his head, but there was nothing in it." On the second Sunday in February, 1600-1, followed by Southampton, Rutland, Sandys, Monteagle, and some 300 gentlemen rushed to St. Paul's Cross, expecting to find the congregation assembled, and to use it as a means for raising the City. But his foes had been beforehand; there was no preaching. Baffled and defeated, he made his way back by water to Essex House, which he hastily fortified with a view to defend it to the death. The Queen's troops brought artillery to bear, and planted a cannon on the tower of St. Clement's Church—not the present one, but the old structure that was pulled down 1682—which compelled the Earl to surrender. We need not follow him to his trial and execution. But how many who pass to and fro between St. Clement Danes and Essex-street pause to conjure up the bloody scene that was enacted two centuries and a half ago where they tread; the noise and smoke of battle; gallant Salisbury courting death at an open window, and crying out, when hit on the head, "Oh! that thou hadst been so much my friend as to have shot but a little lower;" the boom and flash coming ever and anon from the top of the old church tower; the shrill, hoarse cries of command interspersed with cries from the wounded, and

the veil of fog that fell over all like a pall dotted here and there by cressets?

A few years later and Essex House was the home of another Robert Devereux, but instead of being the victim, like his father, he was the vanquisher of the Crown. True, the roystering cavaliers who could not defeat the Parliamentary General nicknamed Essex House Cuckold's Hall, from the scandalous misconduct of his wife, the daughter of another of Elizabeth's victims—the Duke of Norfolk—which did not prevent the House of Commons, headed by their Speaker, the Lord Mayor and Aldermen, paying the Earl of Essex a congratulatory visit on the occasion of the battle of Newbury, when the untrained militia of London triumphantly withstood the tempest charge of Rupert's Cavaliers.

Coming down more than a century later, Essex-street affords another illustration of a very different character to the preceding one. The home of the knights, of bishops, and of Elizabeth's nobles was swept away, and on a portion of its site was and is still the Essex Head, where Dr. Johnson established an evening club.

The singular success which has attended the establishment of large hotels here on the American system, the promptitude as well as the extent with which visitors have patronised them, have led to the publication of proposals for building a new hotel on the site of Lyon's-inn. The ground has been leased for a long term of years, with the option of purchasing the freehold. It is premature to speak of the architectural character of the design, further than that the ground floor is to be appropriated for shops. When the New Concentrated Law Courts come to be constructed upon the site already pointed out, the hotel will be of great public convenience, and there can be no doubt of its proving highly remunerative to the shareholders, for good hotels are as profitable and sure investments as any. The selection of Lyon's-inn is singularly felicitous for the erection of an hotel. There it will not interfere with anything worth preserving, while it will promptly lead to the abolition of Holywell-street and to the widening of the Strand at that part. Lyon's-inn is an inn of Chancery belonging to the Inner Temple. It was originally a guest inn, purchased by law professors and students in the reign of Henry VIII., who converted it into a Chancery. It has not, so far as we are aware, a single historical association, though of great antiquity, to plead for its preservation; for the fact that during a few years, and until the establishment of the Architectural Union Company, Conduit-street, it sheltered the Architectural Association, cannot weigh with any one. It stands in Newcastle-street, named after John Holles, Duke of Newcastle, who died 1711. Holles-street, adjoining, is another souvenir, and is even more devoid of architectural merit than of antiquarian interest.

The site for the New Courts of Justice lies partly within and partly without the City. It is enclosed between Carey-street, Clement's-lane, the Strand, Fleet-street, and Bell-yard. Mr. Hayward in his report, which was read on Tuesday to the City Commissioners of Sewers, says, that on the area to be taken, only four or five houses are within the City, that Temple-bar is scheduled, and Shire-lane is to be destroyed as a thoroughfare. Here we are approaching ground which has the reputation of being connected with historical associations. Ben Jonson's haunts are to the east and south of Bell-yard, and will, therefore, not be touched. The only illustration that Mr. Cunningham mentions of Bell-yard is, that Pope wrote letters to a friend who lived there, which the poet spoke of as "that filthy old place." Shire-lane has some associations, but none sufficiently important to induce the toleration of the infamous purposes to which it is now devoted. In the upper part lived Bickerstaff, the Tatler; Elias Ashmole, the antiquary, resided there also. Theodore Hook and Dr. Maginn were both locked up at the same time in a spunging-house in the lane, which, even so far back as James I.'s time, had an *alias*, Rogue-lane. In the shop of a pastrycook, Christopher Katt, who was famous for his mutton pies, was established, in 1700, the Kit-Kat Club, composed of 39 noblemen and gentlemen, zealous partizans of the House of Hanover, among whom were Somerset, Richmond, Grafton, Devonshire, Marlborough, Newcastle, Dorset, Sunderland, Manchester, Wharton, Kingston, Somers, Halifax, Sir Robert Walpole, Vanburgh, Congreve, Granville, Garth, Addison, Maynwaring, Stepney and Walsh. But who now, great as might be his devotion to Whiggery, would have stomach for mutton pies made in Shire-lane? The club has long ceased to be; but the name is preserved in portraits of a certain size, from Kneller having painted the members of the club all on one scale, then quite new.

Temple-bar is scheduled, but we have reason to believe that it will not be removed. No architect will regret its removal, though it is the work of Wren, any more than will the historical student, for it is a comparatively modern innovation upon the ancient posts, rails, and chains which used to separate the City from Westminster; and the only thing to be remembered in connection with it is, that it served to hang up the heads and quarters of the gentlemen who suffered death for their loyalty to their king. From Temple-bar, on the north side, up to Wyche-street, the houses are all modern. The straits of St. Clement's,

Butcher's-row, where Sully once slept, and where Nat Lee got drunk on the night he fell and was stifled in the snow, on his way through Clare-market to his lodgings in Duke-street, and which was a continuation of Holywell-street eastward, was swept away to make room for Alderman Pickett's improvements in 1813. Clement's-inn, "where they will talk of mad Shallow yet," will not be touched. In St. Clement's-lane, part of which will be pulled down, lived Sir John Trevor, cousin to Lord Chancellor Jeffries, and twice Speaker of the House of Commons. He was found guilty of corrupt practices, and, as Speaker, had to put the question whether or not he ought to be expelled the House. Worst of all, he had to declare the question carried in the affirmative.

Neither Carey-street nor Boswell-courts, Old and New, call for notice. Lord St. Leonard's can scarcely be serious when he pleads on their behalf against the concentration of the Law Courts in the law neighbourhood.

OBELISKS.

THE decision of the Queen in the matter of the Albert Monument has naturally set men thinking upon the forms and decorations of obelisks. A simple obelisk may, of course, be easily designed—if the mere copy of an ancient work can be called design; but we believe that something more is needed than a mere repetition of one or other of the monoliths which once stood before the propylon of an Egyptian temple, and that the subscribers to the fund, as well as the public, will not quietly suffer the large sum collected to be frittered away upon an enlarged edition of the Waithman monument, or a huge replica of the hideous terminals to many Renaissance balustrades. The combination of sculptured groups at the base, with the thin tapering form of the obelisk, will test the resources of architects far more than would the design of a monument unlinked with any previously determined principal feature.

The grandeur seen in many of the old obelisks springs chiefly from the sense of durability which they convey to the spectator, being chiefly hewed and squared out of the "time-defying material," granite, and consisting of monoliths of unusual size. The mere form of a small obelisk has but little beauty to recommend it. It was, nevertheless, a happy stroke of art which forbore to carrying the tapering lines to a point, and splayed the sides of the summit pyramidally. The dignity of the obelisk is thus preserved, and its difference from a pyramid sufficiently marked. All obelisks have a greater or lesser family likeness, and all either were or were not intended to be what Strabo calls them—Books of History—covered on their four sides with inscriptions.

We purpose giving a brief description of the principal obelisks which still remain scattered amongst the ruins of Egypt, or which have been transported thence to European capitals. It is unnecessary that we should touch upon the question of their antiquity. We may take it for granted that they are "Messalet Pharaum," but whether Thothmes lived 1,000 or 3,000 years before Christ does not much affect our present purpose. Neither is it worth present inquiry, if Pliny's account be true, that Mitres, King of Egypt, was the originator of these monuments, and that they were first reared at Heliopolis, in honour of the Sun, which gave its name to the city. One phrase is, however, worth noting for its drollery. He speaks of Rameses "pitching on end an obelisk," which "carried in length one hundred foot wanting one"—as though the feat were as easily performed as setting up a five-foot rod.

Nearly all the Egyptian obelisks were set up in front of temples, one on either side of the doorway. The path leading thereto was, in many cases, an avenue of sphinxes, such as we see faithfully represented in the Egyptian Court, at Sydenham. This accounts for the obelisks being in pairs. There are two, for instance, at Alexandria—the famous Cleopatra's needles, although what that queen had to do with them we cannot tell, nor can any one, it appears, inform us. They stood originally at Heliopolis, and were brought thence by the Ptolemies. Like the majority of the Egyptian obelisks, these are of the red Syene granite, and are somewhat less than 10 diameters in height. One is still standing, the other lies prostrate by the side of it. It is this latter which was presented by Mohammed Ali to the English Government, but which has not been deemed worth the cost of transport. The standing column is 70 feet high, the fallen one, 66 feet. The pedestal on which the former stands increases its height by nine feet. It has suffered considerably, especially on the south side, from the effects of the atmosphere. The inscriptions upon its prostrate companion are almost obliterated. The desolation which surrounds them has earthed up the base of the one, and hidden all except the upper side of the other. Amongst the ruins of old Alexandria, by the "still-vex'd shore" of the Mediterranean, the monoliths of a dynasty long passed away rest more appropriately than they could if removed from the country, as well as from the city, to the glory of which they formerly contributed.

The celebrated Heliopolis seems to have been remarkably rich in obelisks. Besides supplying stone, which we have just alluded to, several of the European specimens have been brought thence, and at the present day its one obelisk, rising upwards of 60 feet, first greets the traveller's eye as he approaches the city from Cairo and Mataréich. The pedestal projects from the obelisk 2 feet on either side, without moulding of any kind. Abd'allatif speaks of "les deux aiguilles de Pharaon," of "la tête recouverte d'un espèce de chapeau en cuivre, en forme d'entonnoir qui descend jusqu'à trois coudées environ du sommet."

The broken obelisk near Baggig is peculiar, in so much as the apex is rounded instead of pointed, and, like that at Heliopolis, appears to have

been originally covered with bronze or other metal. A slight recess from the sides of the obelisk has given rise to this belief. The obelisk is in two fragments, but, complete, would have been about 40 feet in height and 4 feet in diameter.

The easternmost of the twin obelisks at Luxor alone remains there. Its companion is that which now forms the centre of the Place de la Concorde, at Paris. They are both splendid specimens, covered with a profusion of deeply cut inscriptions and hieroglyphics, in many instances exceeding two inches in depth.

In the adjoining ruins of Karnac there are two obelisks of large dimensions; one still stands, the other has fallen by its side. They are 92 feet in height and 8 feet square. They are surrounded by a peristyle of Osiride figures.

Higher up the Nile, just above the first cataract, on the island of Philæ, Belzoni procured the largest obelisk which we possess in England.

The obelisk in the At-Meidan, at Constantinople, is of granite, and partly covered with hieroglyphics. It is about 50 feet high, and is called after Theodosius, but it is believed that that Emperor removed it from another site, where it had been set up by Constantine. Nicetas, in the life of St. Ignatius, Patriarch of Constantinople, says that it had at its top a brazen pine-apple, which was thrown down by an earthquake. The pyramid of Constantine Porphyrogenetus, standing near, is sometimes called an obelisk, but it is really what we have designated it. It was covered with metal, as were, possibly, the apices of the obelisks at Heliopolis and in the Fyoom. The holes are visible into which the wooden pegs fitted which secured the metal casing.

The obelisks of Rome are eleven or twelve in number. They have all more or less been surmounted by Christian emblems, and fixed on ordinary Italian pedestals instead of the unmoulded plinth, standing on two or three steps, which the Egyptians deemed more appropriate to them. With the Egyptians the hieroglyphics were the principal feature of them; with the Popes they were the least considered. These latter regarded them as huge blocks, to be converted by minor ornaments into Christian monuments. They are, of course, the oldest monuments which the Eternal City contains, and nothing testifies so strongly to the enduring quality of these monuments as the fact of their still existing after repeated overthrow and neglect. With the exception of one—that in front of St. Peter's—all of them have been, since the period of their transport from Egypt, thrown down and, have lain uncared for amidst ruins, or been buried and forgotten until chance unveiled them to a more appreciating age. The old Roman conquerors had a passion for obelisks, and must have employed immense sums of money in bringing to Rome these trophies of their Egyptian conquests. This passion, after slumbering for ages, was rekindled in the middle of the sixteenth century by Sixtus V., who, immediately after his election to the Pontificate, determined to transform them into Christian monuments. He invited suggestions from all parts of the world for the best means of removing the huge monolith from the Circus Nero to its present position in the great square before St. Peter's. Five hundred different schemes were submitted, and eventually Fontana, the architect, who designed the church of St. John Lateran, was employed upon the work. Fifty-two times, it is said, his efforts were unsuccessful, but after repeated benedictions and the employment of 600 men and 160 horses for upwards of twelve months, he had the gratification of completing his task. If we are to credit a very improbable story, this was, however, only performed by the extra-official counsel of an English sailor, or, as others more probably have it, of a man named Bresca, who, spite of the injunction to silence, bade them "wet the ropes," which, consequently contracting, landed the obelisk in its place. The labour will be understood when we say that the single stone weighs nearly 400 tons, that it is 82 feet 6 inches in height, and in diameter 8 feet 10 inches. It was brought from Egypt in a ship built expressly for it by Caligula, who, in the following inscription, still legible, dedicated it to Augustus and Tiberias:—DIVO. CAES. DIVI. IVLII. F. AVGVSTO.—TI. CAESARI. DIVI. AVG. F.—AVGVSTO. SACRVM.

The obelisk is of red granite, and bears no hieroglyphics. The apex is ornamented with a metal finial, surmounted by a cross, which was removed 120 years ago, when some relics of our Saviour were inserted in it. The obelisk stands upon a double pedestal; the upper one bears some bronze ornament, but the die of the pedestal being no wider than the base of the obelisk, has little more effect than to raise the whole to a height of 132 feet from the ground.

The largest and finest obelisk at Rome, then lying in three fragments in the Circus Maximus, next attracted the attention of Sixtus V. Fontana's skill and energy was again called into action. To fit the fragments together it was necessary to cut off a portion of the base, but notwithstanding this diminution, it remains the tallest obelisk in the world, and is surpassed, even in story, only by that which Semerimus is said to have cut out of the Armenian quarries, 135 feet high by 5 feet in diameter. The Lateran obelisk is still upwards of 100 feet high. It is surmounted by a cross, and stands upon a moulded pedestal. The whole height from the ground is 140 feet. There is a difference of 8½ inches in the dimensions of the sides, two being 9 feet, and the other two 9 feet 8½ inches. This peculiarity is frequently met with in Egyptian obelisks. It did not interfere with their appearance as they were originally placed—before the temples—but detracts from their beauty when fixed in the centre of a square or court. The discrepancy was doubtless intentional to afford a broader field for the inscriptions.

The Circus Maximus likewise yielded to Sixtus V. the splendid obelisk which first greets the traveller on his entrance to Rome by the Porta del Popolo. It is covered with hieroglyphics, which different interpreters have

variously translated. It appears, however, to have been brought from Heliopolis by Augustus, who, on two of its four sides, renewed its dedication to the Sun. Sixteen hundred years later it was again reared by Fontana in the same city, and not far from its former site, but this time a cross was placed as the crowning feature of the work. The obelisk itself is 78½ feet high, but with the base and ornaments rises to 116 feet.*

LABOURERS' DWELLINGS.

ONE of the most satisfactory features of the present day is the disposition which is showing itself among those who have wealth and influence to employ the advantages they thus possess for the benefit of the classes whose work has been an indispensable element in the process by which that wealth has been procured. More persons now-a-days recognise that it is the duty of an employer to care for the welfare of his workpeople than formerly; and what is perhaps of more importance, the employing class are beginning to feel that, as a class, they are bound to do what they can for the good of the labouring class, collectively as well as individually.

It has, therefore, become a matter of some importance that the best construction and arrangement for labourers' dwellings should be understood and adopted, and that those improvements which science and skill have placed within the reach of the middle and wealthy classes should be extended to the working man, both in town and country.

Much, very much, remains to be done before the dwellings of the upper and middle classes are placed in a condition of even tolerable safety and healthiness; much may be gathered from some recent observations of our own on the subject,† and from the discussion which lately took place at the Institute upon Mr. Henry Roberts's paper "On the Essentials of a Healthy Dwelling." Still it is clear that in any building of the better class, where the smallest attention was paid to sanitary considerations, or where any professional superintendence is employed, there need be no difficulty, and, generally speaking, will be none in obtaining all the security for health and comfort that well-arranged drains, dry construction, good water, and free admission of air and light will afford.

Far otherwise has it been with the dwellings of the labouring poor; till recently any advantages of this sort were almost invariably beyond their reach, and it is not too much to say that in a majority of instances, and up to a very recent date, you would find far more regard to sanitary appliances and to convenient arrangement in the stables of the farm-buildings of any proprietor, than in the dwellings of his workpeople, either in town or country.

Some of our nobility—such as, for example, the Duke of Bedford—were among the earliest to commence a system of cottage building on their estates, and many of their cottages are both picturesque and convenient. The example, like steam cultivation, land drainage, and other modern improvements, has begun to spread, and we propose in the first instance to say a few words on the requisites of a good cottage for agricultural labourers, and then to refer briefly to the improvement of the dwellings of operatives in towns. In doing this we shall endeavour, as far as possible, to avoid repeating what has already appeared on the subject in these pages, and shall, therefore, pass over some points really of great importance, but which have already received full consideration.

One of the cardinal points of good building is that every structure should be thoroughly well adapted to the requirements of its site and circumstances. This requirement when observed will raise the simplest building to the rank of an architectural work, and is as necessary to good cottage building as to anything else. The habits of the labourers in the locality must be considered, the local materials and modes of construction must be employed, and the advantages and difficulties of the site viewed in relation to drainage, aspect, water supply, levels, access and the like should be carefully considered and made the best of; and, lastly, the rate of wages and amount of rent obtainable must be taken into account in determining the extent to which desirable improvements may be carried.

For a labouring man, married and with a family, it is proper to provide four rooms—a living-room and three sleeping-rooms—one for the parents, one for boys, and one for girls. It is also extremely desirable to have a small well ventilated room or space in which the sink and the copper shall be fixed, so as to keep them out of the living-room, and a closet for provisions. The outbuildings will comprise at least a convenience and a fuel store. The habits of the district will decide whether a pigsty outside the house, and a baking oven, are or are not requisite; and whether—as is the case in Yorkshire—the kitchen-range commonly preferred will not supersede both oven and boiler; whether the floor of the living-room shall be of brick or boarded, and an immense number of minor points.

In such a cottage as this, one sleeping-room must be on the ground floor in order to economise space, and convenience as well as economy will be consulted by building pairs or groups of three or four.

One of the great difficulties to be contended against in arranging cottages is the necessity of allowing and providing for the taking of single men, employed in the neighbourhood, as lodgers; although, at the same time, the most objectionable occurrences are constantly arising in consequence of this custom. In a cottage such as we have described, occupied by a family with only young children, the ground floor bedroom can be conveniently and suitably allotted to this purpose. When the family is older, this, of course, ought not to be allowed, and provision might be made for adding an additional bedroom on the ground floor, at the back of the house, for a lodger. We have seen in some excellent labourers'

cottages arranged for factory workpeople a small back kitchen appended to the house, with a bedroom over, accessible either out of the parents' bed-room, through a door which can be closed at night, or by a ladder in the back kitchen itself. This arrangement renders it possible to accommodate a lodger, and yet shut him out completely from the family at unseasonable hours; so that should he not return at the hour of going to bed, he can reach his room without entering the house at all.

It is idle to say, prohibit lodgers, although this is actually said by the less considerate among those who promote cottage improvement. Such a prohibition cannot be enforced and had better, therefore, not be attempted. It will be more prudent to provide for the lodger, and to regulate strictly the number of them allowed on the estate.

Three-roomed and even two-roomed cottages are useful for labourers with no families or small ones, and should be occasionally built. The size of the rooms it is difficult to regulate; the best rule to give is, build them as large as you can afford, for the evil of not having a separate room for children of each sex is so great that it would be better to form two closets no larger than ships' cabins rather than put them together in one room of better size.

This brings us to the very vital consideration of cost. Even the wealthiest man will feel reluctant to continue investing money in cottage improvement if he finds a very bad return from it; and the majority of landowners and farmers will be entirely deterred from the attempt, should such a result seem even probable. With care and judgment, cottages can be built so as to yield a moderate return, and no landowner, building for the good of his own tenantry, and as an example to his neighbours, should allow himself to exceed such an outlay as the rent he can get will pay interest upon. If he does, he may, indeed, benefit his own people, but he will fail to do much good to those around.

It is not because of the fashion having set in that way that farmers have taken up with drainage and subsoil ploughs, but because of the heavy harvests got off the lands so treated; and it will require the greatest care on the part of those promoting improved cottage building to place it on anything like the same footing.

There are many districts where eighteenpence a week is as much as can possibly be paid by a labourer for a cottage. This amounts to within two shillings of four pounds a year, and it is not too much to say that any good cottages fetching this rent, built for £80 or less each, will be sure to be copied or imitated extensively; if they cost a hundred pounds each they will be but little followed, and if they cost a hundred and twenty pounds each or more, they will probably remain solitary examples.

There are certain things which ought not to be postponed for any consideration, such as the separation of the sexes, drainage, water supply, dryness, warmth, ventilation, and such general solidity as will reduce the cost of maintenance to a minimum.

These being secured, the question of cost becomes one of paramount importance, especially in rural districts, and probably nothing but actual experiment will suffice in many cases to show what is the lowest amount for which it is possible to build. Great simplicity of plan and of details, a dexterous use of the materials nearest to hand, and, where possible, a repetition of the same parts, or the same sizes, will tell very markedly upon the total cost, more especially where a number of cottages are to be built, and need not, with care, exclude picturesque effect and an air of finish and completeness.

Perhaps the most advantageous circumstances under which cottage dwellings can be built, occur when they can be placed in the vicinity of large towns. The artisans and even ordinary labourers get better pay in towns than in rural districts, and consequently can afford higher rent; while, at the same time, land and building are not so costly in the outlying districts adjoining those towns as to counterbalance this advantage, so that, when carried on with prudence, cottage building in such neighbourhoods will be found very remunerative.

The case of the dwellings of the labouring population in London, or in the heart of any great city, presents difficulties as formidable, if not more so, than those which beset the improvement of cottages in rural districts; for, although the wages of skilled artisans are high and the better sort of labourers get good pay, yet there is an immense mass of the population sunk in the greatest poverty; and, at the same time, the cost of building materials and labour, but, above all, the value of land is so high, that a very much higher rent must be required of tenants in order to make such an undertaking as the building of decent tenements for labouring people at all remunerative.

There is little doubt, however, that by the plan of building agglomerated dwellings, the cost of sites, and, to some extent, the cost of such parts of the building as foundations, roof, drains, water supply, and gas piping, may be distributed over so large a number of tenements as very much to counterbalance the disadvantage referred to.

Few poor people in London dwell in an entire house; an immense number are lodgers in large houses, now mean and squalid, but once the dwellings of a richer class, who have forsaken the neighbourhood; and such occupy a single room, or two rooms, miserable and wretched beyond description. It has, therefore, been found practicable to provide large buildings, cut up into small tenements, to the occupation of which the poor have not the smallest repugnance, and which usually enjoy the advantage of the very best possible arrangement, so far as drainage, water supply, dryness, warmth, and ventilation go.

The returns of profit from these buildings vary, but it is clear that some of them really merit the reputation of highly remunerative undertakings, and as in some of them a certain amount of quiet lavishness or retiring ostentation, if one may so speak, can be traced, it seems pretty clear that,

* To be continued.

† Page 47, ante.

with good management and economical construction, the building of lofty blocks of workmen's domiciles may be counted upon as sure to pay.

A very large part of London, however, is covered by small two or three storied tenements, which seem to let readily enough. A visitor finds them generally parcelled out among lodgers, who enjoy none of the advantages of a building originally designed in order to be let out to separate occupants, while, on the other hand, the owners of the house can have little or none of the comfort of people who live undisturbed in a quiet separate home of their own.

The great number of these small and comparatively low houses, each with its own little space behind it, is one of the causes of that extraordinary extent which is far from being the least of the difficulties with which those who have the control of London streets or sewage, or gas or water, have to contend. Were it but practicable to introduce the habit of building loftier buildings, arranged for the purpose of division into floors or tenements, as is, for example, customary in Edinburgh and in Paris, a great deal more might be made of the area of London than is now possible.

To those who contemplate the erection of buildings of this nature, the statement of Mr. Roberts at the late discussion at the Institute will be important. He then observed that tenements built in blocks on the "open gallery" system are held to be separate tenements, and are exempted from rating, whereas those which form one block with internal corridors and staircases are liable to be considered as one building and rated accordingly. This will make a very considerable difference in the receipts, and consequently in the profits of such undertakings.*

We would conclude by repeating emphatically the truth which has been already implied in what was said about rural cottages—namely, that it is most essential to go low enough. We thought, with our national schools and our ragged schools, that we were educating the children of the poor, when suddenly the establishment of ragged schools and reformatories brought to light a vast mass of ignorant, untaught children, below the reach of all previous existing means of culture. It has been very much so with labourers' dwellings.

There are many families in London who can only afford, and will only choose to live in a single room. If we build tenements, and declare that in no case shall fewer than three rooms be let together, we insure decent accommodation, but we leave the very poor entirely unhelped.

So it is with many other features of the labourers' dwelling movement; and while earnestly desiring that the number of single-room tenements for families shall be reduced as low as possible, we yet must plead for the improvement of these as well as of large and better dwellings.

The model dwellings have done much good; the recent proposals for building labourers' cottages on the railway lines out of London appear likely to be also beneficial; but we look round to know what is being done for the very, very poor; and beyond some little amount of legislative interference as regards lodging-houses, and some sort of sanitary interference about drainage, we find as yet little or nothing accomplished, but an immense amount of work to be done.

HANDEL FESTIVAL AT THE CRYSTAL PALACE.

THE directors have issued a programme of arrangements for the forthcoming Triennial Handel Festival at the Crystal Palace. Considerable additions are now in progress in the centre transept, having for their object increased accommodation and improved acoustical arrangements. It will be remembered that the larger portion of the present orchestra was built in 1857. In 1859 it was enlarged, and was also enclosed at the sides and back with screens.

Disinclination, however, at that time to undertake so large a work as entirely roofing the orchestra with similar material to that of the sides and back, led to the employment of a vast oiled and hardened awning of canvas, after the manner of the Velaria. This, although effective to a considerable extent, did not, it is candidly admitted, effect all that had been anticipated. Neither in form nor structure could all be attained that was intended. And thus the force and clearness of the choruses—improved as they were—did not reach the point anticipated from the additions made to the numbers of the orchestra, while it was no less evident that still more required to be done to aid the solo singers. It is now determined that the entire orchestra and the space beyond it as far as the intersection of the great transept with the nave, shall be solidly roofed in.

The width of the orchestra will be 216 feet, the sides are about sixty feet high, or nearly the same as the Birmingham Town-hall. Wooden girders being carried across, in the form of an arch, rising about 40 feet in a clear span of 216 feet, the underside will be filled in with bracings, lined with well-seasoned match-boarding bound closely together by ingenious appliances, until the whole surface becomes as hard and as resonant as a drum-head.

A sketch of the roofs of various music halls, cathedrals, and other places used for great musical performances, all drawn to the same scale, is appended to the programme. In this comparative view the large extent of the roof over the Handel Orchestra is very apparent.

The performances will take place on Monday, Wednesday, and Friday, June the 23rd, 25th and 27th.

THE PROPOSED RAILWAY BRIDGE AT BLACKFRIARS.

AT a special meeting of the Common Council, held at Guildhall on Saturday, the Lord Mayor presiding, Mr. Vallance, Chairman of the Bridge-house Estates Committee, presented report from them, calling the attention of the Court to a Bill now being promoted in Parliament by the London, Chatham, and Dover Railway Company, which contemplates the removal of the flight of stairs leading to the Thames on the east side of the south end of Blackfriars-bridge, and the appropriation of the space in front of Albion-place abutting upon the bridge. The report stated that the Committee had had an interview with a deputation from the railway company on the subject, and particularly with respect to the road and footway in front of Albion-place, which the company are seeking power to appropriate for the purpose of a railway station. At that interview the Committee urged that it would be for the public interest that the space in question should be kept open, as at present, as affording a convenient and ornamental approach to the bridge from the south, and a proper means of access to the river by the stairs. To that proposal the deputation declined to accede, and hence the Committee now recommended the Court to petition Parliament against the Bill. Mr. Vallance, in moving the adoption of the report, urged that it was the obvious duty of the Corporation to resist the proposed interference with a part of their property which it was so desirable to preserve intact, having regard to its value as an approach to the new bridge at Blackfriars now in contemplation. He added, as another ground for opposition, that the company proposed to cross Holland-street, Blackfriars, with four lines of railroad on the level, which, he submitted, was an arrangement fraught with danger to the public. He took occasion to correct a rumour for some time current, to the effect that the Thames Conservancy Commissioners and the Board of Admiralty had approved the design of the bridge which the London, Chatham, and Dover Railway Company were empowered to construct across the river at Blackfriars. It would appear, he said, that at one time, when the company contemplated the erection of a nine-arched bridge there, the Conservancy Commissioners approved the plan; but afterwards, when the company changed their minds and proposed to construct one of five arches instead, no such approval had been given either by the Board of Admiralty or the Conservancy Commissioners to the latter proposal, and that he stated on the authority of Mr. Holroyd, the secretary to the company. Mr. Vallance added, it was much to be lamented that the Corporation had to take a part antagonistic to any great enterprise, but no public body could allow such an unjustifiable intrusion on their public and private rights as the Bill in question sought to effect. Mr. Barnes commended the report of the Committee, and stated that the inhabitants near the south end of Blackfriars-bridge were also petitioning Parliament against the encroachment. Mr. Hartridge said at the recent half-yearly meeting of the London, Chatham, and Dover Company very bitter complaints were made by Sir Morton Peto and others of the impediments which had been thrown in the way of the company's bridging the Thames by the Corporation, and of the consequent loss and inconvenience to which they had been put. Mr. Vallance said the delay was owing, not to any act of the Corporation, but to the company themselves having changed the plan of their bridge from nine arches to five, and to their not having received either the sanction of the Admiralty or of the Conservancy Commissioners to a bridge of five arches. He added that the solicitor of the company had just addressed a letter to the Remembrancer stating that they were prepared to construct a bridge of three arches. The Court passed a resolution agreeing with the report of the Committee.

RUGBY WATER SUPPLY.

THE Rugby Board of Health is seriously embarrassed by the discovery that a plan which it has pursued for four years, and upon which it has spent £4,000, for supplying the town with water, has irremediably failed. The increasing population of the town has for a long time made the scanty supply of water at present obtainable a growing inconvenience, and Mr. Hawkesley was called in to advise the board. That gentleman gave his decided opinion that the river Avon was the only source from which an adequate supply could be obtained. But the opposition of the neighbouring owners of water-mills and other difficulties, on the one hand, and the narrowness of the powers at their command on the other, determined the board to look elsewhere for the desired supply. Mr. Hawkesley was induced to suggest that relief from their difficulties might be found by boring down to the water-bearing strata of the new red sandstone. The boring has reached the water-bearing store of this formation, but it has also reached a deposit of rock-salt, the existence of which was wholly unsuspected, and the salt dissolving in the water brought up by the bore-hole, communicates to it a degree of brackish salinity which renders it totally unfit for food, as well as for all ordinary domestic purposes. From an analysis of samples which have been successively taken, it appears that the salinity has steadily increased, until in the last specimen there were found 1,256 grains of saline matter in the gallon of water. Further boring into the salt bed would probably increase the saltiness of the water to the degree which would make it available as a brine spring for salt works; or if the boring were continued to the next formation—the permian—it is not improbable that abundance of good water would be found, but this stratum lies many hundred feet below the bottom of the bore-hole, and could only be reached by the adoption of a costly apparatus, and the expenditure of a considerable amount of time and money. For the water which they so much need the Rugbians must now look elsewhere, probably to the Avon, to which they must have a better right than the millowners.

THE CURATORSHIP OF THE SOANE MUSEUM.—The trustees of the Soane Museum have come to a very singular conclusion. Having refused to adopt Mr. Bonomi, the curator appointed for them by the Royal Academy, they have appointed as their temporary curator, in his stead, the very same Mr. Bonomi. Plain persons will be puzzled to understand such a course, which has been rendered necessary, we believe, by the perversity of the very trustees who represent in Lincoln's-in-fields the academical body. We can hardly think the Royal Academy will let the matter rest where it now stands. Their right to elect a curator is, in fact, set aside, and that not by the general body of trustees, but by the particular members whom they have themselves sent to the Board. The liberal and non-academical members thought the Academy's choice a good one, and sought to ratify it.—*Athenæum*.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post*. Gold watches, 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enable persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

J. W. BENSON, 33 and 34, Ludgate-hill, 46 and 47, Cornhill, London, E.C. Established 1749.

* See Report of the Discussion in the BUILDING NEWS, for Feb. 21, page 133.

ECCLESIASTICAL DILAPIDATIONS.

THIS subject, always of some importance, claims the especial attention both of dignitaries and of every holder of a benefice (to which a building of any sort belongs) at a moment when the management of ecclesiastical dilapidations is under legislative attention, and changes are foreshadowed in the conditions upon which Church temporalities are enjoyed.

Incumbents have hitherto stood in the position of tenants for life, being only prospectively amenable as trustees for the due conservancy of their estates, but, by the Ecclesiastical Dilapidations Bill, brought before the House of Lords last session, and to be prosecuted in the present, the system of self-management is to be replaced by constant official control.

Among the things it is desirable to set at rest with regard to ecclesiastical dilapidations is, their proper extent, a point upon which surveyors have shown great difference in practice, and judges have held equally varied legal views; but no attempt is made to close this question by any definite provision in the Act.

If the term dilapidation were taken in the widest sense of deterioration, a sinking fund would be necessary to meet the ultimate state of decay into which every building must eventually and inevitably fall; but the clergyman's responsibilities are practically limited to such restorations and repairs as would be exacted from a lessee subject to repair only and not to rebuild, for when that duty devolves upon an incumbent recourse is generally had to Queen Anne's Bounty, and the living mortgaged for many future years.

The moderate sum obtainable from the bounty shows, however, that it is to be regarded as merely meeting the extra expense of rebuilding, with the improvements of the period, an edifice reduced to the last stage of dilapidation, which the incumbent is personally bound to render substantial and complete. It is a condition, indeed, that the sum advanced by the governors shall be deemed supplemental, and be laid out after the value of the dilapidations has been expended.

By this arrangement the work of repair and renewal falls with equal pressure upon every holder, and though the general renovation occurs only at distant periods, the duty of reinstatement, as particular portions of buildings fall to decay, is never relaxed.

It has been sometimes considered that internal painting, paper-hanging, and distemping are to be regarded as of the nature of cleansings, and therefore not properly subjects of assessment; but it appears more reasonable that things without which no house would be finished, and which must, therefore, be included in a new building, should be thenceforth maintained.

In more than a hundred cases of episcopal and other residences erected within the range of my observation, the specifications always provided, in addition to internal painting, papering, &c., chimney-pieces, grates, bells, and such fixtures as are of permanent necessity, and not dependent on the taste of any particular occupier. This seems a safe criterion in new edifices, and also where a continuing charge is instituted for repairs; but it should not be strained beyond the proper limit, or to the prejudice of the rule, that incumbents are not called upon to originate but only to maintain, repair, and reinstate whatever has once existed. Thus, a chancel in the diocese of Winchester was surveyed with, the twofold object of assessing the dilapidations and of putting the edifice into a state of completeness. There was a considerable difference between the two estimates, because the first had reference to maintenance only, while the other embraced improved constructions and new, though necessary and appropriate, features.

Next to the nature and extent of dilapidations may be considered the times appropriate to their investigation, and any change in the old rule, which marked avoidances as the proper occasions, would trench upon the privileges of incumbents, while, if properly and systematically observed, the settlement of accounts at each change of stewardship would secure most of the expected benefits without affecting the independence of those concerned.

It does not seem an improper requirement, however, that every incumbent, upon taking possession of a benefice, should cause the dilapidations to be assessed, and deposit for application to its special object the money obtained from his predecessor in respect thereof.

The person best suited to make the valuation would be a surveyor nominated by the entering incumbent, and if also confided in by the previous holder of the living there would be a simplicity of operation and a saving of expense; but in cases of dispute the appointment of an umpire might be properly left to the bishop.

This would be, in some respects, preferable to the appointment of diocesan surveyors—would relieve the bishop of needless responsibility, and leave the body of experienced surveyors undisturbed in their vocation. But even should the appointment of such officers be determined upon, it may still be a question whether the Act should come into effect in any benefice until after the occurrence of one avoidance.

A subject upon which the united action of the clergy seems capable of being exerted with beneficial results is a modification of the custom of insurance against fire, which the provisions of the Bill render compulsory. In a case where I became trustee, some premises had been insured for seven years, and the premium paid down; but at the end of the term I was agreeably surprised at receiving back the whole amount by way of bonus, as the losses and charges of every kind had been met by the mere usufruct of the money. This circumstance has led me to conceive that a restoration fund might be usefully instituted in each diocese, presided over by the bishop and governed by the dignitaries. The ordinary insurance charges would possibly produce a fund equal to all purposes of restoration.

In the event of buildings being destroyed by fire the advances should be free, while in other cases loans might be made at a moderate rate of interest.

Practical information calculated to impart a sound tendency and lasting basis to the Bill is no doubt at command, and with that object, rather than from attaching much value to these remarks, I submit them to perusal.

THOMAS MORRIS.

SOUTH KENSINGTON MUSEUM.—During the week ending 1st March, 1862, the visitors have been as follows:—On Monday, Tuesday, and Saturday, free days, open from 10 a.m. to 10 p.m., 12,441; on Wednesday, Thursday, and Friday, students' days (admission to the public 6d.), open from 10 a.m. till 5 p.m., 1,252. Total, 13,693. From the opening of the Museum, 2,522,718.

ART IN CONNECTION WITH MANUFACTURES.

THE Rev. Charles Boutell, M.A., lately delivered a lecture at Sheffield on "Arts, Education, and the value of the Arts in Practical Connection with Manufactures." A considerable portion of the address was devoted to a consideration of the progress that has been made in the application of art to manufactures since the first Great Exhibition, and the probable position of Sheffield in the approaching Exhibition. During the eleven years which have elapsed since the great meeting of producers from all parts of the world in Hyde-park, a vast change had been made in the relative condition of art and manufactures. The two primary questions of economy and utility have now associated with them a third—the question of adornment. It is recognised as a great axiom that we must have beauty in our works, in order that they may be perfect. Not only must a part of anything be beautiful, but the whole. Its beauty must grow with its growth, as the beauty of a leaf grows with the growth of the leaf; and, arguing from this proposition, he contended that in order to realise true excellence in our manufactures, we must not be content to allow one man to make an article and another to decorate it, but must so train up our workmen that he who produces the work, though not himself actually producing its decorative qualities, may be capable of producing and appreciating them. Our workmen must be artist workmen. The deficiency in that important requirement, which was discovered in 1851, had led to the establishment of the South Kensington Museum, and of Schools of Art in connection with it all over the country. He did not enter into the general question of what these schools have been doing for the country, because the results of their operations will be proved to demonstration in a short time, when the Exhibition opens; but he discussed at some length the point whether Sheffield had properly appreciated the importance of art in connection with manufactures. He thought that in no town in the empire was that point of more importance than in Sheffield, since it is threatened with a very severe and resolute competition by continental manufacturers. During the last eleven years, the hardware productions of England, especially cutlery, have been looked upon with very jealous and envious eyes by the skilled craftsmen of the continent; and there has been a cherished desire and intention to beat England on her own vantage ground in the manufactures in the metals. Of course we, as a nation, are not prepared to allow ourselves to be beaten; but, in order to maintain in 1862 the supremacy of 1851, we must show that we have made vast improvements upon the excellence of past days. Starting from the point we reached in 1851, we must adduce proofs of substantial progress, or we should find that the advance of other nations has left us very much in the rear. The great question, therefore, is, have we been working on such a system as will enable us to look forward with confidence to satisfactory results? and in order to answer this question, we must inquire into the agencies which have been at work amongst us. Mr. Henry Cole, the head of the Department of Science and Art, at a recent visit to Sheffield, extolled very highly the progress which was visible from the operations of the Sheffield School of Art; and his expression of satisfaction, taken by itself, was certainly sufficient to dispel all anxiety as to the future. But the question arose, were Mr. Cole's opinions the result of such a sound consideration and judgment of the case as to be conclusive? Unfortunately for those who maintained that because Mr. Cole said so there need be no fear as to the future, that gentleman had given an opinion upon another branch of art—namely, architecture. At a recent meeting of the Society of Arts, Mr. Cole said, in the most explicit manner, that the body of architects were a set of ignoramuses, that there was but one great architect, and he a captain of military engineers, and that the building which he has designed to contain the Exhibition is one of the finest, if not the finest, building that ever was produced in the world. He (Mr. Boutell) held, on the contrary, that that building is an outrage to architecture and a disgrace to England. There is not a railway shed that ever was built that is not as fine a work. It is simply like a carpenter's shop magnified to a large extent, with no design or ornament or good point about it whatever. This fact brought home to his mind the serious consideration whether Mr. Cole might not be equally mistaken when he said that the Sheffield School of Art was doing all that could be desired. He urged upon his hearers the necessity of careful study of the principles of art, so that they might become not mere copyists, but original thinkers, able in the highest walks of art to maintain the supremacy of their country. He had seen much in Sheffield to convince him that the progress which had been made was not so great as he had hoped it would be. Our manufacturers and designers had expended great skill and patience and emulation in merely copying works that have been designed and thought by other men. They must become original thinkers, capable of carrying out their own designs, if they wished to keep ahead of their competitors.

ARCHITECTURAL DRAWINGS FOR THE INTERNATIONAL EXHIBITION.

THE honorary secretaries of the Institute of British Architects have received an intimation that drawings and models in Class 37 will be received at the Exhibition Building from the 20th to the 30th instant, instead of from the 1st to the 8th as originally intended.

THE BOYNE VIADUCT.—According to the report of the Dublin and Belfast Junction Railway directors, the extensive works which Mr. Hawkshaw recommended for the Boyne Viaduct, to insure the permanent stability of that structure, have been completed in a substantial and durable manner.

PARAFFIN OIL.—A series of interesting and important experiments have been recently made on mineral oils. From these it appears that no danger can arise from the use of paraffin or coal oil if it be properly refined. To ascertain whether this necessary process has been effectively performed, it is only necessary to place the oil in an open dish in a water-bath, and heat it to a temperature of 130 degrees. If, when elevated to this heat, it does not ignite by the application of a match, it is safe; but any oil igniting at a temperature below 130 degrees is dangerous, and should not be used for domestic purposes. As an example of the extremely dangerous nature of some American rock oils, sold as paraffin, it is stated that samples purchased in shops have exploded at the temperature of 46 degrees.

SURFACE DECORATION.*

IF I were to call your attention to the thousand-and-one different ways of ornamenting a surface, I should far overstep the limits of a paper, and, perhaps, your patience. The subject is so extensive that I fear much will not have the attention its importance demands; indeed, I have been sorely puzzled to define its limits, and feel myself so unequal to the task of describing its varied application, that I must ask your indulgence for shortcomings and omissions in the short and consequently incomplete form of the subjects alluded to. However, I have endeavoured to bring before you, with as much interest as I could gather, the several productions of the artist and manufacturer, and that which I trust will not prove the least interesting is the different means employed in producing the results we so frequently admire without being acquainted with the difficulties of their fabrication. Firstly, I will briefly allude to the ruling principle of form and colour, and its application to the different materials used for external work, such as bricks, terra cotta, the several kinds of tiles, &c., &c. The more costly marbles and their imitations, grained work, and the different decorations as applied to stucco, also to interior work in general, whether local or applied. Mosaic will also find a passing notice.

We must all agree to the universal feeling in every clime and age to imitate and beautify—whether we instance the gaily striped of tattoo of the wild Indian, or the more refined touches on the cheeks of a modern belle; indeed, it seems a passion so inseparable from man, and so necessary for the development of his faculties, that it would appear to be the earliest if not the first attempts at order and civilisation: these being established, something more than mere usefulness is required to satisfy the mind's necessities; soon the feelings of a refined age grow weary of a crude utility, and man is urged to a higher and nobler sentiment—to develop the beautiful, to provide a necessary as essential as food for the body.

The proper application of ornament has of late received more of that attention and care necessary for the development of true art principles; it is too often left to the whims and fancies of an untutored workman, partly from indifference on the part of the architect to minor details, and not unfrequently his inability to guide; hence we frequently meet with ornaments in the most unfortunate positions, and as inconsistently placed as they are contemptible in execution. A just appreciation of design and ornament will be sure to lend to its appropriate use, for without some acknowledged canon of perfection to enable us to select the beautiful and true from the meretricious and false, we can never hope for much progress in rendering the adaptation of art consistent with the requirements of the age. It is highly necessary that the difference between design and ornament should be thoroughly understood: design has reference to the construction of any work both for use and beauty, and therefore includes its ornamentation also. "Ornament" is merely the decoration of a thing constructed—(Redgrave on Design); it cannot, therefore, be otherwise than secondary, and I must not usurp the place of a principal, or the object is degraded into a mere ornament, and is a sure sign of declining art and social life with it.

Ornament is generally divided into two classes—the symbolic and the æsthetic. The former includes the representation of all objects which appeal directly to our understandings, and have a figurative sense peculiar to the object symbolised, the meaning of which is supposed to be understood. It is regulated by prescribed rules. Such is the early Egyptian, where every vestige of feeling for the beautiful was crushed by a priestly symbolism, which precluded the natural representation of living things, and visited the poor slave of an artist, should he deviate from their acknowledged canons of decoration, with a merciless punishment. I think there is much in the symbolic representation of ornament that is well worthy of our study, and the fact of its being an essential feature in every epoch of art, particularly the early Christian, should give it a positive claim in our education. Whenever symbolic ornament is used it must be subject to the ruling principles of design as ornamental art, or however ingenious the combination of forms used, unless strictly conventional, it certainly cannot meet the requirements of good taste. Æsthetic ornament is quite another character: in the former it was the work of the artist to convey an acknowledged meaning; in the latter the object is to produce a pleasing effect on the mind. Hence it is unlimited in its resources, and depends entirely on the artist's capabilities, his appreciation and embodiment of what is pure and beautiful. The beautiful arrangements of form and colour which nature has profusely scattered over the earth are at his disposal, but he is not to take from this vast treasury of art her valuables, and indiscriminately appropriate them according to his unguided fancy, or art will always be in its infancy; or to treat with indifference the labours of those noble men of art of all ages, whether Goths or Greeks, is a sin not to be tolerated at the present day. If we analyse the manner in which the distinguished men have selected and treated their selections from nature, we must at once come to the conclusion that all natural objects represented in decorative art to meet the requirements of good taste must be conventional; that is, the geometrical forms of the plant or object represented are so arranged and frequently connected with other geometrical forms that the natural order of its development is lost, yet the general feeling and characteristics of the object conventionally should be preserved. With natural imitations it is the contrary: the detail, mode of growth, and every peculiarity that marks its development is represented; this species of ornament, so fascinating and dangerous to true principles, can never rank higher than mere imitative art, and cannot be valued for the amount of mind bestowed upon its production, but solely for the dexterous manipulation it exhibits. Considering this naturalistic treatment in relation to our subject, a few examples will be sufficient to demonstrate its absurdity. We will begin with the paper-hanger's most marketable effects. The most distant lands appear to have been ransacked for the largest specimens of botany to be found; here we have passion-flowers in torture, twisting and clinging to endless stalks that lead Heaven knows where; bunches and festoons of flowers of every conceivable shape and colour, all tending to destroy the idea of flatness a wall or similar surface should convey. Ay, and as Owen Jones observes (in his excellent little book on the Application of Colour), "we have ladies' dresses, ribbons, prints, furniture, and carpets, which are more and more admired from the more perfect knowledge of botany they display, violating the sense of propriety. At every step we walk on flowers and tropical plants crushing beneath our feet; we have chintzes covered with roses in violent contortions over the sinuosities of our furniture, or broken in twain by the folds of curtains; ladies robed in rose, shamrock, and thistle (a high achievement); the fast man with race-horses and ballet girls printed on his shirt, and pointers worn on his neckerchief. So runs the fashion of the present day; would that its sun were set that we might awake to a more healthy dawn."

It is with great unwillingness I dismiss the highly interesting and important subject of form with so brief a description; my space, however, compels me to pass on with a somewhat similar sketch on colour. The same rule applies to colour as in form. All objects, whether selected from nature, geometry, or the creation of the artist's fancy, when used as a surface decoration of any kind, should be treated in the flat, that is, without giving it the representation of light and shade, otherwise it is no longer a legitimate ornament, but a counterfeit, and however beautiful it may be as a picture it cannot be tolerated as an architectural decoration; it then (if positively demanded) must be treated as a picture, and separated by a panel or otherwise from the essential features of a constructional or rational decoration. I cannot feel that the science of colour as at present advocated is sufficient to demonstrate the harmonies and pleasing contrasts that abound in the works of nature; an attentive observer will find many contradictions not easily explained; and certainly Oriental artists, who have produced designs which in delightful combinations of colour surpass all others, knew nothing whatever of the modern theory of colour. However, "it is not for us to destroy the scaffold until we have finished the building" (of our education). These rules, crude and dogmatical as they appear, have certainly much in them to be valued, if they do but lead us to search for the more subtle beauties that colour everywhere reveals. Do not understand me to infer that they are insufficient to explain much that without them would be a mystery; what I mean is, they cannot prevent the talented and educated artist, with a good eye and instinct for colour, producing harmony without them, and not unfrequently in opposition to them. We are not all gifted with the same physical endowments that enable us to appreciate the charms of colour, and need some guide to direct our wanderings, to lead us to a better result than trusting a faulty nature. We find a great partiality among the uneducated in art for colours easily recognised, as we find in form the preference generally given to direct imitations from nature; however absurd the application, they will be sure to attract the ignorant, while a good and modest design, kept subservient to the object decorated, is treated with indifference; so the child

or barbarian is more taken with that his capacity will allow him to understand than with the matured reasonings of an accomplished mind. To proceed with the more immediate subject of colour, we find that the countless hues of nature are reduced to three primitive colours,—yellow, red, and blue; these are supposed to neutralise each other, or produce black, in the proportion of three of yellow, five of red, and eight of blue. It is considered that because they neutralise each other in those proportions they will also harmonise by arranging them in superficial quantity and intensity at the same ratio, which is well known to be the case (probably as much by accident as anything else). If we mix two of these primaries in the proportion of their figures, the secondary colours,—orange, green, and purple, are produced; and by adding the figures of the two primitive colours mixed we have the proportion of surface required to harmonise with the remaining primary, which is, therefore, called its complementary; thus, three of yellow with eight of blue gives eleven for green, its complementary being red, five, forming a well known harmony in those proportions, and so on with the other secondaries, orange harmonising with blue, and yellow with purple. To produce the tertiary colours, citrine, olive, and russet, we mix the secondary colours in like manner; thus, the two secondaries, orange and green, produce citrine, which harmonises with its complementary, purple; the same with olive, formed of purple and green, harmonises with its complementary, orange; or, russet, of orange and purple, with green. Hues of colour are reformed by mixing the primaries or their nearest representation; these when mixed with black are called shades, or, with white, tones or tints. Much might be written on the nature of contrast and harmony of colours entirely independent of what is considered good taste and fine feeling for colour. Education and practice has taught many of us to place colours in juxtaposition, or side by side, so as to form grateful and pleasing impressions on the mind, while science has unfolded many of the laws which influence them; and to no man of modern times is more commendation due than to the distinguished Frenchman Chevreul for his high scientific attainments and thoroughly practical reasonings and conclusions; they are to be the more valued from his position enabling him to practise on an extensive scale the precepts he has given, with what results all Europe can testify. The properties of contrast, taken generally, may be divided into three distinct effects—firstly, light with dark colours, as yellow, the lightest of all colours, with purple, the darkest; they are also complementary to each other, therefore contrast and harmonise—secondly, contrast of hue, as red and green, which are non-contrasting as to light and dark, but powerfully striking in their hue, being complementary also to each other they harmonise; and lastly, the contrast of warm and cold colours, as blue, the coldest and most retiring, with orange, the warmest and most advancing, these are complementary and consequently in harmony.

There are singular and extremely interesting modifications of these contrasts which deserve the most attentive study. A keen observer will discern something more in the juxtaposition of these colours than simple contrasts. The discoveries of Chevreul on this subject, which he has named "the law of simultaneous contrasts of colours," explains the following phenomena:—Firstly, if two tints of the same colour be juxtaposed, an apparent difference of colour is observable at the parts in proximity, the light tint will appear lighter and the dark tint darker; this is called the contrast of depth. Secondly, if two hues be similarly placed, they receive a double modification—firstly, the light colour appears lighter and the dark colour darker; secondly, as to their hue, each colour becoming tinged with the complementary colour of the other; this is called the contrast of hue, and is explained by the colours reflecting with their own proper hue a portion of the complementary rays, and of white or undecomposed light. Thus we contrast the complementary colours, purple and orange—the purple reflects with its purpleness yellow rays (its complementary), which are scattered over the yellow at their junction, which gives it a deeper yellow; and the yellow, in like manner emitting purple rays, darkens and enriches the purple. In opposition to this, now, if blue be placed on a purple ground (not its complementary), the blue will be sullied by its neighbour, and appear greenish, while the purple is dirtied in the direction of russet by the orange complementary rays from the blue; both colours are thus injured in brilliancy, and do not harmonise; hence we may infer that complementary colours in juxtaposition mutually enrich each other.

The infinite appliances of colour to the different forms and surfaces of a building afford the architect such a fruitful source of variety in design, without interfering with the general forms, that its study and application cannot be too forcibly impressed. An agreeable colour imparted to a beautiful form cannot fail to add more beauty to it as a whole, without detracting from the original. If we, instead, clothe it in a disagreeable, unsightly colour, it will not only be unpleasant to view, but its form will suffer much from its unbecoming associate: we may conclude, therefore, that appropriate colours assist a beautiful form; it not only does this, but enables us to distinguish the variety nature everywhere presents us, which otherwise would be mingled in the utmost confusion. The use of primitive colours is generally considered a vulgarism, and doubtless so when used in large masses. Again, what does nature teach us? Here see with what a sparing hand the little dots and spots of positive red, yellow, and blue are distributed to heighten the more sober hues, and prevent insipidity and sombreness, without destroying the harmony with a mass of glaring colour. I cannot feel that the introduction of applied colour on the exterior of our buildings can ever meet the requirements of the present day, and I hope, for one, it never will. It would be painful, indeed, to see the tawdry yellows on every advancing series of mouldings, because it is an advancing colour, and the hollows painted blue, because it is a retiring colour, while red must be in shadow to check its positive nature. This is the mere accommodation of art to theory, which in practice would be intolerable. There is much difference of opinion on this subject, and frequently much valuable time is wasted on fruitless arguments as to how much or how little of this or that ancient building was embellished with surface ornament. We have positive evidence it was as general for them to apply colours to their exteriors as well as their interiors; that it also met the approval of their most critical and accomplished artists we have abundant evidence; and, lastly, that their sensibilities, climate, and tradition in every way assisted the natural instinct for colour and surface ornament peculiar to all Eastern nations; and I need only refer to the Exhibition of 1851, and the scientific reports emanating therefrom, to convince you how vastly superior they are in the treatment of ornament and arrangement of colour (barbarous as we may consider them in other respects), not only to us, but to all Europe. Their designs exhibit the most beautiful and elaborate conventionalism in the adaptation of natural objects, and the harmony of their colours can satisfy the most fastidious critic. Here, then, may we study from a fruitful source, and find those good elements of decorative art and taste that appear inseparable from the Eastern mind; may it not be the remnants of that high æsthetic feeling handed down to them from age to age, which their indolent and non-progressive character has preserved for admiration and, I trust, our benefit.

Our subject, taken in a general manner, resolves itself into two sections: one in which the natural colour is inseparable from the material used; the other where colour is applied to impart that pleasure so congenial to our senses, independent of its protective utility. In the first instance, the employment of brick to the exterior of our buildings, by its general use and adaptability for London elevations, claims our special attention, now that stone, it would appear, does not withstand our atmosphere ten years in a perfect state. It is a cheap and durable means of decorating the surfaces, and when judgment and taste is used in the arrangement of the different colours, very good effects can be produced. There is an instance not far from here, one of the most successful arrangements of bricks I have seen—the tower of the church in Margaret-street: the different coloured bricks are arranged on a red ground in bands; they are not so abundant, though, as to cut up the surface into unmeaning strips, but are well studied, and evidently the work of an artist. I mention this in opposition to the more discordant arrangements to be met with so frequently in London, such as the common buff grey etocks divided with black bricks in courses a little more than a foot high, ending up the surface in a very unsightly manner; the use also of the light red bricks and these stocks as a ground are also objectional, for the tones of the two colours are so alike that there is not sufficient contrast, hence an insipid, dull, and foggy appearance is the result; whereas, a little study in the arrangement of colours would readily assign each to its most telling position. We shall find, I think, that black will be too crude to separate somewhat of a grey or indigo cast, we cannot fail to observe that these colours not only contrast, but assist each other (bricks, I believe, are made of this colour now), and I fancy the effect would be more in keeping with the surface. The subject of brickwork affords so many points of interest, and is so closely connected with my subject, that I must ask your patience a short time longer, to consider a few suggestions for the use of it to more than

* Paper read before the Architectural Association by Mr. R. O. HARRIS.

ordinary buildings. The present dimensions, however useful they may be as wall bricks, and the many present applications that fix their size, would in many instances (to me) have a preferable effect exteriorly, particularly when applied to large buildings; if they were larger, the numerous mortar joints gave anything but the effect of strength and durability, and, moreover, are not at all interesting in appearance. We will imagine, then, the facing bricks only to be 9 by 4½, and one, two, and three bricks high, these will readily work in with the other bricks, and being made with all the modern improvements of colour, will afford, by their varied size, a field of unlimited resource to the architect; the larger ones may also be made one brick and a half long, three bricks high, and one brick wide; these also I would have V jointed horizontally, and, if possible, vertically, and may be very applicable for a large monochrome surface. I think much more may be done than has yet been attempted in the production of moulded brickwork, or even carving. I wish more particularly to call your attention to a kind of surface ornament that brickwork is capable of to a very eminent degree. Admitted that we have bricks with an external surface of 9 by 1½, or 9 by 9; this will afford us good space for a neat and appropriate ornament slightly sunk (stamped) below the ground, supposing of a red brick, it may then be filled up with another coloured clay after the manner of early encaustic tiles, and burnt, or, *vice versa*, the ground being sunk instead of the ornament, leaving an ornament in relief in one colour. There is another way in which these bricks may be ornamented very simply and economically, that is, to sink on the surface a simple geometrical panel, which shall be the type of a series to be continued as fancy may suggest in strings, pilasters, jambs, and even arches; this certainly would not have the effect of a mere decoration stuck on the wall, as the indiscriminate employment of tiles frequently suggests.

There is another material capable of a very extensive use, which for hardness and durability can defy the withering influence of even our destructive atmosphere; that is, terra cotta. It has been used in different parts of Italy as early as the thirteenth century, and adapted to the buildings of many distinguished architects subsequently. Its use in England until lately has been very limited, partly from a prejudice against the use of it, caused by inferior manipulation and inartistic modelling and production. In the use of this material an architect's knowledge of modelling and ornament will be found of the greatest value to him, for he will not only be able to embody his ideas at once in the clay, as easily as in the ordinary modelling clay, which may be hereafter fired when it is ready for firing. Certainly the numerous specimens exhibited at the Kensington Museum by Mr. Blanchard, of the Blackfriars-road, are sufficient to show its capabilities; there are margins on some of the works that have a sharpness and neatness of angle that would be impracticable in freestone work, and I may add that the artistic finish and colour of the several works exhibited show a perfection that must in time find a just appreciation. The predominant colours are red and a Bath stone colour or pale buff.

I may here mention that the columns, caps, and other decorations of the arcades in the Horticultural Gardens at Kensington are of this material; the shafts of the columns and caps are exceedingly elaborate in design. Specimens of these may be seen at the Museum. A sketch of the manipulation of this article from a pamphlet by Mr. Blashfield on the subject says:—"It is chiefly composed of clay, flint, glass, and fossils, containing phosphate of lime; these substances are crushed and ground to a powder, and passed through sieves, and when combined with as much water as necessary to form a paste fit for modelling or moulding, the compost is ground in a mill and afterwards beaten until all the air bubbles are expelled, which completes the first operation. When required for use it is bedded in sheets on a bench, and beaten to the consistency of putty and pressed by hand into the moulds; it is then left to dry a little, the mould is then removed, and the cast having sufficiently dried, is placed in the kiln and fired with a gradual heat until the object is partially vitrified, the kiln is allowed gradually to cool, and the articles withdrawn are finished, unless required to be painted or glazed."

The employment of granite, marble or freestone with brick, is a subject upon which so much has been written, and so ably, by a gentleman who has made it his particular study, that I cannot do better than refer you to Mr. Street's book for further particulars on this beautiful but costly style of embellishment.

I think if there is one style more than another in which material colour decoration of the exterior is in best keeping, the secular Gothic of many parts of Italy claims our special attention. I mention Gothic, because variety of surface seems so much more akin to it than the severer forms of Classic art. For my own part, I cannot see the impropriety that some antiquarians see, of engrafting an advantage of one style on another; I think it the only way of forming a complete style; however, this may raise the vexed question of style, which I must not enter upon here.

Encaustic tiles and their uses will be the next subject to consider. It has become very fashionable of late to introduce tiles of various descriptions on the exterior of buildings; many have certainly a very good effect, while others are anything but pleasant to look at, mostly by conveying the idea of security by having the positive appearance of being stuck on the wall, and not unfrequently with a diagonal joint, which is very objectionable construction, for a tile, even if it is a sham, should convey the idea that it is a portion of the wall, and if diagonal lines are necessary, they are certainly very simply affected on the tiles. I think they should not impress you that they depend solely upon adhesion for fixing, but should be encased where possible by a margin of some kind, so as to form, as it were, a sunk panel. It occurs to me that a grooved, moulded or splayed string of terra cotta, one or two bricks high, would form a very appropriate and economical fixing for horizontal arrangements. Their position will, of course, suggest their pattern and colours; the border tiles of a floor will frequently admit of the pattern being used in a vertical or horizontal position with very good effect. The varied productions of the several tile manufacturers claim our attention, from the ingenuity and perseverance bestowed on reproducing imitations of works that in ancient times were wrought to such perfection, such as the different kinds of mosaic pavement, of which more hereafter; we have all that fancy can desire, from the common red and black Staffordshire tiles to the beautiful imitations of the *opus tessellatum*, from the ancient encaustic to the painted and glazed porcelain tile, with all its varieties for mural decoration. I will here give you a short account of the different manipulation, in producing tiles.

The common red, black, and buff material known as Staffordshire paving tiles are so nearly allied to bricks, and suitable only for very common purposes, that it is unnecessary to class them with the superior kinds used for decorative purposes. The simplest and most approved plain tiles of different colours used for ornamental paving, &c., are those made from compressed porcelain material (a mixture of flint and fine clay)—"The substances are reduced to a fine dry powder, and in that state subjected to strong pressure between steel dies; the powder is compressed into about one-fourth its bulk, and is converted into a compact solid substance of extraordinary hardness and density much less porous and much harder than the common porcelain uncompressed and fired."—(Essay on "Mosaic Pavement," by F. O. Ward.) The invention is due to Mr. Prosser, and carried out by Messrs. Minton. The powders may be compressed in their original state, forming white tiles, or by admixture with material imparting the necessary colour, and may be cut of any shape to suit the pattern required; they are frequently made to represent the different kinds of mosaic work.

There are many imitative of a kind of mosaic work known as the *opus tessellatum*, or, as it is generally called, tessellated pavement; it is made by most of the tile manufacturers after their particular improvement, and generally consists of a rough earthenware ground, upon which is affixed the coloured porcelain material, arranged according to the design; they are then subject to a great heat, which renders them semi-vitreous, and exceedingly hard, while it brings out the colours to the tint required.

The next class of tile consist of those known as encaustic or inlaid tiles; in the manufacture of these none have approached the excellence of Messrs. Minton, in design, workmanship, or material. These are, perhaps, the first ornamental tiles produced in England, of which there are some beautiful specimens of the thirteenth and fourteenth centuries. They are made by pressing clay of the colour required for the ground into a mould, having the intended pattern raised; the tile being withdrawn, the ornament will be in *cavetto*, the intended pattern on the tile is then filled in with a coloured liquid clay; the surface having been scraped level, it is fired, and the colours are brought out to their proper tint. The better kinds of work are rubbed on the surface, which gives them a beautifully level and opaque surface.

The last my limited space will allow me to notice is the very extensive class of painted porcelain tiles, used mostly for mural decoration; in the Museum at Kensington are some

magnificent specimens of the applicability of these decorations to architectural purposes. The earthenware paste or plastic clay having been formed for the required size, it is laid aside to dry, and then fired for sixty hours it is allowed gradually to cool for two days, when it is withdrawn in the state technically termed biscuit, and is then ready for glazing; in this state the well-known colours of china are produced in the material, viz., white, drab, brown, blue, black, &c., &c.; the glaze is now applied, when no further decoration is needed. There are two ways of applying the coloured ornamentation on the surface—one by painting the surface before it is glazed with certain pigments, principally the oxides of the metals, producing certain colours; the article is then glazed and the whole effect produced in one firing; the other by using enamel colours, and is closely allied to glass painting—it may be termed enamel painting—by which works of greater delicacy and beauty are produced. The process is simply this—the article is supposed to be fired and glazed; this forms a ground upon which another coloured glaze is added, in parts requiring to be coloured. The colours are prepared from metallic oxides (as in the former case), and mixed with fluxes or fusible glasses. The colours are ground (with the fluxes) in essential oils or turpentine, and applied on the surface of the glaze; the article is then placed in the enamel kiln, when the colours melt and combine with the glaze; the flux is generally made of borax, flint, and oxide of lead. It may be interesting to know what colours the different oxides produce—oxide of gold produces the most beautiful tints of red; antimony, tin, and lead—yellow, cobalt, blue, iron orange, copper green, &c.*

HOUSE OF COMMONS.

TOWN SEWAGE.

In moving for a select committee to inquire into the best means of utilising the sewage of the cities and towns in England, Mr. BRADY said he wished in the first place to determine whether the sewage of our cities and towns was in itself a valuable commodity—that is, a commodity fitted for agricultural purposes. The next point to be considered was the best and cheapest means by which that commodity could be placed upon the land; and, thirdly, he desired to ascertain the value of this sewage. He wished also to bring before the committee the engineering difficulties which he was given to understand existed in the matter. The subject was one of great importance. It was a melancholy thing to see sewage constantly wasted which might be profitably employed in agriculture. The matter was worthy of consideration both on social and sanitary grounds. Mr. Wheatstone had laid it down that it was an engineering impossibility and a commercial impossibility to utilise sewage in a fluid state, and went on to say that the only way it could be utilised was by solidification. Professor Liebig had expressed an opinion that, if England intended to continue a great agricultural country she should apply herself to the problem of utilising the night-soil of her large towns. He held in his hand a series of calculations which had been made by several eminent men of science, doctors and chemists, all testifying to the great pecuniary value of the sewage of the country. One valued it at £15,000,000, another at £52,000,000, a third at £64,000,000, and Dr. Parkins, guided by the calculations of Professor Playfair, estimated its value at £93,283,000 a year. The figures might appear fabulous, but they were not his own. The hon. member next referred to the decrease in the yield of corn, and said large tracts of land had been abandoned because of the inability to restore its productiveness. It was supposed that the supply of guano would not last more than twenty years, and the time was come for providing a substitute.

Mr. COWPER said the utilisation of sewage, and the removal of it from the towns for the purpose of agriculture, had long been a subject of interest to boards of health. The late Board of Health had made a very valuable report upon it, but little progress had been made; for although the sewage of small towns could be advantageously applied to agriculture, as was seen by the examples of Rugby and Watford and Edinburgh, yet, as regarded large towns, engineering skill had failed in finding a satisfactory system. He was not sanguine that an inquiry would lead to any great advance in this branch of engineering and sanitary knowledge, but he should not object to the appointment of the committee. He hoped the examination of persons interested in the subject might throw some fresh light upon it, and the labours of the committee might not prove fruitless.

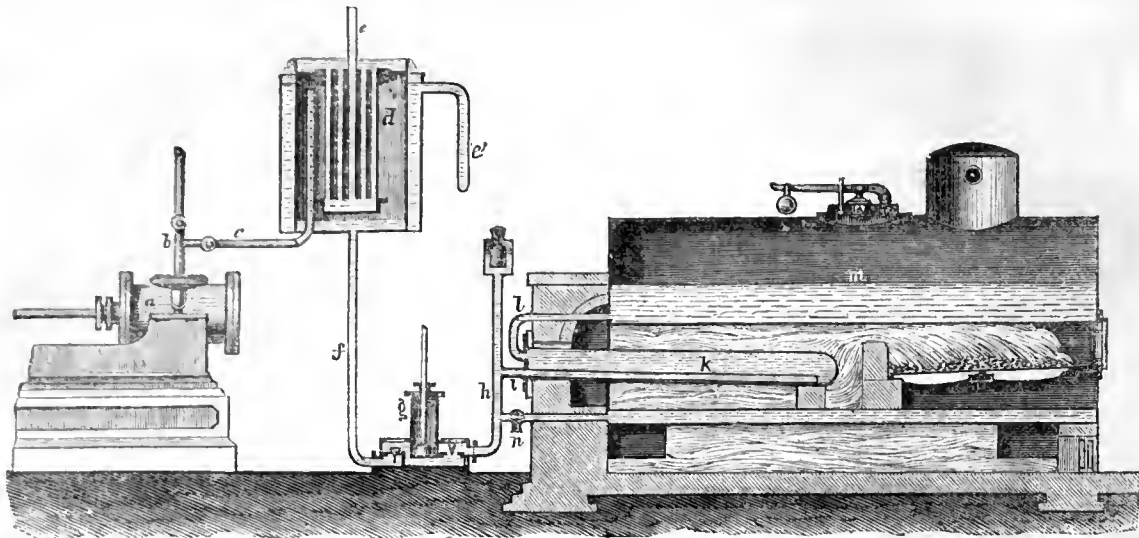
The motion was then agreed to.

WESTMINSTER BRIDGE.

In reply to a question as to when Westminster-bridge would be completely open for public use, and when the houses on the south-side of Bridge-street would be removed; and whether there was any objection to a carriage entrance from the foot of Westminster-bridge to the House of Commons: Mr. COWPER said, judging from the present state of the works at Westminster-bridge, I think there is every reason to hope that it will be open for public use early in the month of May. The houses on the south side of Bridge-street are pulled down as they come into the possession of the Office of Works. I am not able to state any precise date at which the whole of that number of houses will be in our possession. With reference to the proposal that carriages shall be allowed to enter New Palace-yard from the bridge, I can only state that when the ground has been levelled which was previously occupied by the houses near the Clock Tower there will be no difficulty, as regards the ground, in admitting carriages. Whether it would be convenient to do so, as regards the approaches to the Houses of Parliament, is a matter on which I should be anxious to consult you, Mr. Speaker, before giving any answer.

COPYRIGHT IN WORKS OF ART.

The SOLICITOR-GENERAL has moved for leave to bring in a Bill on this subject. Having shown what was the present state of the law of copyright, he said the object of the present measure was to give copyright in paintings, drawings, and photographs. The copyright would last for life and seven years afterwards. With regard to the question between the author of a work and the purchaser, it was provided that the purchaser should have the copyright as a matter of course, unless it were expressly reserved in writing at the time of the sale. Another object of the Bill was this: It was found that considerable traffic was carried on in spurious pictures, which were palmed off upon the public under the names of artists of eminence, whose reputation suffered at the same time that the public were imposed upon. It was proposed to make that a positive misdemeanour, and to prohibit it under penalties. There were some questionable penal clauses in the former Bill which would not be found in the present, but in other respects it would be the same. He would only add that it was of considerable importance, if the principle of the Bill were approved of, that it should pass without delay, for otherwise foreign artists, who would have a copyright in their works in their



PATENT STEAM REGENERATOR.

own countries, would, in the forthcoming Exhibition, be placed in this position, that they should either withhold their works or be exposed to the danger of having their copyright invaded; and, therefore, it seemed to him a good opportunity for introducing a supplement to the existing Act. As to plastic art the learned gentleman said, casts and models were already protected in this country for a period of 28 years from the time of their first production, and, by virtue of the treaties relating to international copyright, foreign artists would have their works of sculpture protected by that Act of Parliament.

Leave was then given to bring in the Bill, which was subsequently read a first time.

STATUE TO JOSEPH LOCKE.

In reply to a question put by Sir J. SHELLEY whether any application had been made for permission to erect a statue of the late Joseph Locke in the gardens near St. Margaret's Church, Westminster, in which the statue of George Canning was placed; and, if so, whether he had granted or refused his consent thereto, Mr. COWPEN said that some of the friends of the late Joseph Locke desired to erect a statue to his memory, and offered to place it on a vacant space near the end of Great George-street, provided such a site could be appropriated for that purpose. It was his duty to state to those gentlemen that he was unable to offer them the site to which they alluded.

PATENT STEAM REGENERATOR.*

IN the drawing annexed, *a* is the cylinder of a horizontal high pressure-engine; *b*, a pipe for conveying the steam, which ordinarily escapes, after acting on the piston, through the pipe *c* into the receiver or surface condenser, *d*; that portion of the pipe (*c*) contained within the chamber or vessel (*d*) is perforated with numerous apertures or openings to admit of the steam separating and passing there through, coming in contact with the tubes or spaces contained therein, whereby it is condensed (forming almost a perfect vacuum, and increasing the effective force of the steam on the piston), and falls into the lower part of the receiver. This vessel or receiver is kept at a low temperature by means of cold water fed from the pipe *e* passing there through, and circulating up the tubes into the upper receptacle, where it flows into the exterior casing, from thence through the exit pipe *e'*.

By means of the pump *g*, the condensed steam is alternately drawn and forced from the vessel *d* through the pipes *f*, *h*, and *i*, into the regenerator *k*, placed in the flue, where it is subjected to the heat arising from the products of combustion, and thence by a second pipe *l* into the boiler *m*, which it reaches completely regenerated, and ready to act again on the piston with all its original force; a cock, *n*, is provided for the purpose of shutting the feed off from the lower portion of the boiler when necessary, and may be used as a sluice cock.

THE SITE OF THE HOLY SEPULCHRE.

MR. JAMES FERGUSON lately delivered a lecture at the Royal Institution "On the Site of the Holy Sepulchre at Jerusalem," his object being to prove that the Church of the Holy Sepulchre is not erected on the proper site, and that the Mosque of Omar is built over the spot where our Saviour was buried. He arrived at that conclusion by inductive reasoning from a great variety of facts. In the first place, he contended that the building called the "Mosque of Omar" could not have been intended for a mosque, which term signifies any erection pointing towards Mecca. Even a wall placed in that direction is a mosque, the enclosure and roof and decorations being merely accessories; but the Mosque of Omar, as originally constructed, did not possess the essential requisites of a mosque, and what was intended for the principal entrance is on the south side, so that a person entering would have had to turn his back on Mecca, which would be considered an outrage in a Mahometan place of worship.

Mr. Fergusson then considered the architectural features of the "Mosque of Omar," and pointed out characteristics which he considered indicated that it was

built in the time of Constantine, or between the years 300 and 400 of the Christian era. It was evidently a sepulchral edifice, and the elevated dome is erected over a remarkable rock, in the centre of the building, which rises above the level of the floor, and contains a small cave, and that, he had no doubt, was the real Holy Sepulchre. He had come to that conclusion when at Jerusalem about sixteen years ago; he had seen drawings of various parts of the interior taken by two English artists, who had obtained a special firman to enable them to do so; and that opinion was confirmed by the evidence he had since obtained, which proved that the building was of the age of Constantine, that it was intended for a sepulchral building, and that it occupies the position assigned by ancient writers to Golgotha. Mr. Fergusson referred to the works of Eusebius, Josephus, and of Clarke, in confirmation of his views, and he contended that the building known as the Church of the Holy Sepulchre exhibits none of the characteristics that should distinguish the real site. The rock inside is a mass of granite, which must have been carried there from some distance, for the rock on which Jerusalem is built is limestone. Neither does the antiquity of the recognised site add much to strengthen its authenticity, for it could not have been fixed upon earlier than the time of the Crusaders. Mr. Fergusson then proceeded to combat the objections that had been raised to the opinion that the Mosque of Omar is the real site of the Holy Sepulchre, the principle of which was that it is built within the present walls of Jerusalem. In answer to that objection he referred to Josephus and to other authorities to show that the ancient walls of the city did not include the site of the Mosque of Omar, an additional wall having been built which encloses within the boundaries of the city several of the holy places that formerly were outside the walls of Jerusalem.

The lecture was illustrated by drawings and photographs, representing the Golden Gate, the interior and exterior of the Mosque of Omar, and of the Church of the Holy Sepulchre, and elevations, showing the distinguishing styles of architecture which marked the dates of their erection.

THE ALBERT MEMORIAL.

ON Saturday the Committee recently nominated by the Queen to advise her Majesty in the choice and execution of a design for the proposed national memorial of the late Prince Consort held a preliminary meeting at the town residence of the Earl of Derby.

Her Majesty having, by the letter of General Grey, addressed to the Lord Mayor, intimated that "nothing would be more appropriate, provided it is on a scale of sufficient grandeur, than an obelisk to be erected in Hyde-park, on the site of the Great Exhibition of 1851, or on some immediately contiguous spot," the Committee at their meeting on Saturday addressed themselves to the consideration of how the wish of the Queen could be best carried to a practical and satisfactory result. Deferring for the moment, as a matter for ulterior consideration, the various questions relating to the artistic groups with which it is in contemplation to surround the monument, and on which it is proposed eventually to employ the most eminent artists of the day, the Committee confined their attention to the possibility of procuring a monolith, or single stone of granite, of the most imposing height and dimensions in other respects for the intended obelisk. They were informed that among the most noted granite quarries in the kingdom are those of Aberdeen and Peterhead; Cheesewring, in Cornwall; Haytor, in Devonshire; and that of the Duke of Argyll in the Island of Mull; those of Peterhead and Mull yielding red granite, and the rest grey. The opinion of the Committee appeared to be in favour of red granite rather than grey, the indestructibility of the material being equal. The prime object, however, being to obtain the grandest single block of stone which the country is capable of producing, having regard to the fund which may be ultimately placed at the disposal of the Committee by the liberality of the nation, the preference for red granite would probably be waived if it were shown that any of the grey quarries could yield a larger monolith than the red ones. The subject underwent much consideration, and eventually it was decided that measures should be taken forthwith to obtain, from those best able, from their knowledge and experience, to afford it, information as to the quarter from which a block of granite may be quarried calculated to answer the condition on which Her Majesty appears to have decided in favour of an obelisk—namely, that it be on a scale of sufficient grandeur. The total amount received in aid of the fund is now over £38,000.

* See page 114, ante.



CAPITALS FROM THE OXFORD MUSEUM.



PROFESSOR SMIRKE'S LECTURES ON ARCHITECTURE AT THE ROYAL ACADEMY.—LECTURE V.*

IN planning an apartment, as in planning a house, we must consult the genius of the place. There are occasions when a simple, geometrical plan would be most suitable; and there are also occasions when too great symmetry is to be avoided. In rooms intended for social uses, convenience, as well as beauty, alike suggest variety in boundary lines of the room. The deeply embowed recesses that occur so often in our old domestic architecture are a source of great beauty and interest, varying the lights and shadows, and breaking the monotony of parallel lines. The oriel window of our old halls, whatever may have been its purpose, is always a pleasing feature, and the deep bays in the galleries of those picturesque buildings happily compensate for their usual narrowness. "These are pretty places for conferences," says Lord Bacon, and his remark, in a lively and agreeable way, truly indicates the commodiousness of those cheerful recesses. The Italian masters, struck by the dryness of a plain rectangular form of room, adopted not infrequently a very happy mode of concealing or obviating that effect, by converting the upper part of the square room into an octagon supporting the angle walls by arches or pendentives, and so leaving the rectangular area unencroached upon. This contrivance is, in truth, of early date. At the Castel del Novo, in Naples, is, or was, a very fine hall wherein this expedient is most effectively carried out.

This mode of growing an octagon out of a square led to a variety of contrivances for the due decoration of the conch, or spandrel space, formed by the overhanging of the four diagonal walls, among which, perhaps, the most ingenious and elaborate were the pendentives devised by the Saracenic artists; a multitude of miniature groined arches, rising in successive tiers, and corbelling over so as to form those singular stalactitic ceilings so characteristic of Moorish architecture.

The remains at Pompeii, and, indeed, of Roman art over all Europe, show that the semi-cylindrical vault was the most usual mode of constructing ceilings in the Classic era; varied, often, however, by groining.

This diagonal vaulting was very dexterously executed by forming the intersecting lines of the groin in a careful, solid manner, filling in the spandrel spaces less carefully and with lighter materials, such as tufa and volcanic scoria. It was this mode of construction, no doubt, which led to the Mediæval mode of vaulting, the intersecting diagonal lines being more emphatically pronounced by wrought and moulded ribs. As at the Coliseum, Pantheon, and other Classic vaulting, we find the spandrel spaces executed on this principle, so in Mediæval buildings, chalk and even calcareous tufa (as at Glastonbury Abbey) were similarly used.

It is not, however, to be forgotten that flat timber ceilings were occasionally executed, not only during the whole Mediæval period, but even from earliest Classic times, also, builders so wrought. The Homeric writings abound with allusions to timber ceilings, with beams painted in bright colours, and even encased in plates of metal work; but we can now only trace indications of the existence of these timbers in the apertures left in the masonry for their reception.

In later Classic times representations of flat timber ceilings occur not infrequently in frescoes. In the 15th century (by far the most actively inventive period of modern art) Italian architects contrived an entirely novel form of ceiling, for which no preceding school of art had furnished the slightest precedent. They reconciled the convenience of a flat ceiling to the more elegant form of the vault, by adopting the cove, or half-vault. This was first executed in wood, the earliest examples of which, so far as I know, are at the Palace of the Academy, at Venice.

Afterwards, these coves became worked in plaster—a mode of construction which hardly bears date earlier than the beginning of the sixteenth century. Attempts are made to obtain a similar effect, in a more truthful mode of construction, by turning in masonry extremely flat elliptical vaults. But Sansovino, who ventured on this expedient at the Libreria, in Venice, was thrown into prison, and fined 1,000 scudi for its failure—a fate which must have powerfully operated on the minds of his brother artists in overcoming their scruples about plaster coves.

Another mode of forming ceilings which was much practised by early Italian artists was to frame them in deep coffers or panels, wholly of wood, often richly carved, painted, and gilt.

I know few palatial apartments equal in grandeur of effect to the great halls of the palace built by G. Romano, at Mantua. They are for the most part of this trabecated construction, and the gigantic force of their coffers, relieved by the extreme richness of the carving, proclaims the master hand of the great master who designed them. In the nearly contemporary flat, panelled ceilings, executed in England by Holbein, as in the Chapel Royal, St. James's, we have but weak and faint imitations; yet, even these are almost bold when compared with the tame and poor panelling of later times. The stuccatori of the last century introduced with some success a more free and artistic treatment of their material, but their art ultimately succumbed and gave way to plaster casting of the feeblest kind.

Having briefly touched on the subject of the forms and proportions of rooms, we will now pass on to the equally important subject of giving light to them.

So much of the architectural effect of a building for whatever purpose it may be destined, and so much of its aptness and convenience, depends on the mode that may be adopted of giving light to it, that it is certainly a matter demanding your special attention and study. The more so, because no general rules can be laid down for the proportioning of windows to the area they have to light.

Much, obviously, must always depend on the purpose of the room to be lighted; much also on the nature of the medium through which the light passes; much on the position of the windows; and, above all, perhaps, upon the degree of intensity of the light obtainable from without. The practice of Italy, for example, would be a very unsafe guide for us in our uncertain climate and sombre atmosphere. Here the most ample panes and the clearest glass will often hardly suffice, whilst, in Italy, such is the penetrating fervour of the sun's rays, that sometimes men are content, as at S. Miniato, near Florence, with the light that can make its way through slabs of alabaster in lieu of glass. We know, indeed, that laple specularis was much used for this purpose in Classic times. Then, again, the light which is obtainable in an open country and in a crowded city obviously must require totally different proportions, whilst a window filled with stained glass will need, in order to afford a given volume of light, an extent of perforated surface that would be altogether disproportionate where clear glass is used.

In the absence, then, of any definite rule, it becomes especially necessary, by habitual observation and comparison, to learn our wants and our resources.

I last week adverted to the importance of the study of the effects of light and shadow in the design of exterior architecture; at least equal importance is to be attached to this consideration in interior design.

In the production of all great effects, chiaroscuro plays an important part, whether it be in a building or a picture. The quality of grandeur depends not merely on largeness of dimensions, but on general treatment, and especially on the treatment of this chiaroscuro. When the form of an apartment is simple—rectangular for example—the impression of grandeur can perhaps only be effectually produced by real size; but when the form is complex, a new element of grandeur arises in the diversity and breadth of its light and dark parts. It is to this, far more than to any other cause, that we are to attribute the powerful impression made on the mind by the interior of a Gothic cathedral; the burst of light from the transept breaking the monotonous effect of the nave; the light on the screen brought out into prominence as seen in contrast with the dim haze of the choir beyond; the splendour of the clerestory, as opposed to the comparative gloom below; these are all effects wholly due to chiaroscuro, and constitute the chief charm of those fine architectural compositions. It has always appeared to me a subject of regret that the undue interference of incompetent judges prevented Sir Christopher Wren from carrying out his first and perfectly original idea for St. Paul's Cathedral, where the effects produced by the double vaulted aisle, surrounding the octagonal nave, would have been truly surprising; my conviction is that had that design been carried out an interior architectural scene would have been the result, wholly unparalleled in any building in Christendom.

The present is, of course, not a proper occasion for discussing the utilitarian requirements of a room. No doubt an apartment destined for pictures must have its light admitted far differently from a room where sculpture is to be exhibited, and both widely differ from

the requirements of an ordinary living-room. But these are questions, although of high importance to every student, which must not here engage us.

There are, however, purely æsthetic considerations connected with this subject of the admission of light, which are, to me, perfectly fit to be entertained within these walls. Very forcible effects are produced by mere contrast in the degree of light admitted.

When an apartment is desired to be specially marked by a gay and festive character, the eye should be prepared by subjecting it to a comparatively dim light. If, on the other hand, a solemn effect is to be aimed at, that object is promoted by previously subjecting the eye to a strong light. I have been frequently struck by the far greater effect of solemnity produced on the mind by entering a cathedral direct from the clear, external air, than when entered from the cloisters or chapter-house, where the eye has already got somewhat accustomed to a subdued light.

Indeed, for every great architectural scene it is well that the eye should be duly prepared. I think it may be broadly stated that a high light is, for almost every purpose, more pleasing than a low light. This is more especially the case when a grand or broad effect is aimed at. By lifting the windows above the ordinary range of vision, the intensity of the light is subdued, and a quiet effect is produced. The sombre light so striking in the early basilicas of Italy is due to this arrangement. No doubt much of the charm of those remarkable buildings is attributable to the unaffected simplicity of form which distinguishes them from the theatrical straining at effect, the multiplicity and complexity of parts, the architectural duster, which are apt to characterise later Mediæval works. Still this pleasing sobriety of form is greatly enhanced by the mode of admitting the light. I will refer you to another illustration, and that of a comparatively modern date, to show you that the principle which I urge on your attention is irrespective of style. At Milan, the ante-chapel of a church, probably of the sixteenth century, is appropriated as a mausoleum for the family of the great Condottiere Trivulzi. At a considerable height from the pavement are deep recesses, which receive the sarcophagi, and over all is the clerestory. The only light, therefore, that this lofty ante-chapel receives is from above, and the effect is extremely impressive. A brief inscription on the walls, alluding to the active life of the great commander, is in excellent keeping with the repose of the scene—

"Qui nunquam quiescit, quiescit—tace!"

(Be silent! for he who never rested, rests.)

I have now sufficiently brought before you the importance of the study of proportion and position of the lights; but yet another essentially necessary consideration remains; I mean the colour and texture of the walls to be lighted. Whether these vertical surfaces are themselves light or dark in tone; whether of a nature to absorb or to reflect light, are circumstances never to be overlooked.

We all know practically, when a room has to be lighted up artificially, how much the requisite number of lights depends on these accidental circumstances.

Observe the strong light produced by a single taper in a room with white walls and compare it with the dim glimmer obtained from the same taper in a room papered with a dark red paper.

Of course the same must hold good in the case of daylight. If, therefore, we have dark walls and furniture it behoves us to have large windows.

You perceive, then, how futile and empirical would be any rule for determining the proportion of solid to void in the external wall of a room. It is, in truth, experience derived from habitual, unremitted observation that can alone safely guide us.

"There are rooms," says the great observer, Bacon, "where you cannot tell where to become to be out of the sun or cold;" and the excess he condemns is, doubtless, a serious fault; but I believe, generally, that an excess of light is a less serious fault than a deficiency, for, in the one case a variety of means present themselves of remedying the defect, whilst the other is not so readily curable.

I have now touched upon some of the more material subjects of inquiry in the interior disposition of a building.

The subject is too large to admit of being treated on in detail in this place, and it would lead us out of the sphere of æsthetics to which I am limited. Nor shall I now enter upon the wide field of interior decoration. I will confine myself to the laying before you a few remarks on the general treatment of interior architecture.

I am afraid I venture an opinion at variance with general practice when I express my conviction that the introduction of a complete order into the interior of a building is a solecism and an indefensible inconsistency.

An entablature, as usually composed, seems essentially a piece of external architecture. The triglyphs of a Doric frieze, for example, are but the ends of the timbers of a floor or roof, and a cornice is but the overhanging extremities of a roof. To introduce these features, therefore, within, seems almost irrational. I know of no evidence of this practice having prevailed among the masters of Greek art, until that art had lost its youthful purity and the original intention of the several component parts of an order had been lost sight of. At all events, I think that these features of exterior construction should be avoided within ordinary apartments. I am aware that this dogma, carried out to its full limit, would extend to the condemnation of labels, or dripstones, and battlements and other details exclusively derived from external architecture. Nor do I see that such can be defended when introduced in the interior, except on the ground that these solecisms prevailed at the best periods of art, and are productive of great richness of effect.

At all events, I would counsel you to be on your guard against a too ready acquiescence in the ordinary practice of applying to the interior of buildings the forms and features of exterior architecture.

Nor need the exclusion of these rigid forms in any way embarrass us. Before "paint and paper" had usurped their undivided dominion over the decorators of our apartments, our ancestors resorted to many means of internal mural ornamentation—means, possibly, more costly, but certainly more worthy of the dignity of art.

Tyre supplied its rich drapery to embellish the walls of Roman buildings, and following in the steps of Egypt, Assyria and Greece, the artists of Rome loved to depict their fairest forms and most brilliant conceptions on the walls of their rooms. Inspired by the example of Eastern art, the founders of ecclesiastical architecture encrusted their walls with mosaics. The looms of the East, also, furnished them with rich hangings, rivalled afterwards by the weavers of France, of Flanders, and of England. But the too general demand for economical decoration in latter times has created whole branches of mechanical manufacture to supply the place and mock the semblance of more durable, solid, and real enrichment: costly hangings are represented by fabrics manufactured by the mill, and the most precious woods and marbles are reproduced by the simple apparatus of the paintbrush and the varnish pot.

It is now necessary that I should draw these desultory observations to a close; and in thus concluding my addresses to you, at all events for this year, I cannot do so more satisfactorily than by giving you a few words of hope and encouragement. I have, in the course of the season, brought to your notice many noble works and many distinguished men; let these examples excite your emulation and quicken your zeal; and especially do I hope that my faulting though earnest words may animate those among you, students of the Royal Academy, whose fortune it may be to encounter early difficulties. Let those difficulties be regarded as a call upon your patient exertions, and let them be the earnest of your ultimate success.

It was remarked to me by an eminent writer and acute observer of nature, in Canada, that those trees ever produced the best timber which, lying on the unsheltered outskirts of a forest, were consequently most exposed to the vicissitudes of climate and most agitated by storms and tempests. So it is, perhaps, that by similar trials the young mind is hardened and nurtured into a firm and vigorous maturity. I might detain you long by a view of the early struggles of great minds, from Giotto, who first imbibed the principles of that art by which he achieved an immortal name, whilst he "tended the homely, alighted, shepherd's trade," down to our own Turner, whose earliest aspirations of genius were breathed amidst the uncongenial obstacles and objects of his humble origin.

The annals of genius are, indeed, full of such examples. Nor let these experiences be lost, even on the youth who may be conscious of less elevated natural powers. We well know that all cannot be first in the race. Yet the history of art records many an instance of men of very moderate claims to the character of genius, whose useful labors have placed them in a highly honourable position. To such men, a steady, well-directed, and judicious application of their natural talents, united with an open, frank, and honourable conduct, have secured for them that reward to which higher genius has often failed to attain.

ON THE PLAN AND CONSTRUCTION OF THE WESTMINSTER PALACE HOTEL.*

It having been intimated that a brief account of the Westminster Palace Hotel might possibly afford some matter of interest to the members of this Institute, my brother, Mr. William Mosley, with pleasure has drawn up the following particulars.

The demand for improved hotel accommodation in the metropolis having been met by a disposition on the part of the public to vest capital in such undertakings, several structures of this kind have arisen, and the movement bids fair to make such buildings, with regard to extent and importance, second to none of those in the other capitals of the old or new world.

The Westminster Palace Hotel Company secured in 1837 the plot of ground forming the angle between the east end of Victoria-street and Tothill-street, containing an available building surface of 3,500 square yards, for a term of 88 years, and at an annual rent of £23, or 6s. 4d. per square yard, or about £3 per foot frontage in Victoria-street.

An Act of Parliament was deemed requisite to afford the Westminster Improvement Commissioners such powers as would enable them to grant a valid title, but the delay occasioned in obtaining that Act prevented the commencement of the excavation for the building until June, 1858.

The architects had, however, progressed with the plans, and by obtaining a separate tender for the excavation, that work was proceeding while the drawings were being completed, and the acceptance of the tender for the work ultimately took place in the following October.

The original contents of the surface of the site was as before stated—3,500 square yards, this was increased during the progress of the structure, and additional land has since been obtained. The total area covered which extends on the basement, is 3,336 square yards, and on the ground floor 2,795 square yards.

The excavation for the foundation exposed the maiden surface of the soil, reached at a depth of 12 feet below the level of the present road, consisting of an even bed of peat earth about 3 feet in thickness, overlying a thin stratum of clay, which latter rested upon a stratum of fine sand full of water.

As might be expected, the original surface (the bog earth) was not without some traces of natural productions or of the early occupants of the locality. Roots of great willow trees, the bed of a rivulet, with plankled margin, a hard caneway in a direction parallel with Tothill-street, leading to the western gateway of the "Close of Westminster Abbey," a pilgrim's hat of goat's hair, pieces of leather garments, with some few other relics of the pilgrims passing to the Holy Shrine from the Tabernacle in Tothill-street, indicated the ancient uses of this part of Thorney Island. But the most interesting circumstance connected with the site is the fact that the house of John Caxton stood near the west end of the present Tothill-street front of the building, and where it is intended at some future time to place a statue to his memory.

Thus the enduring memorials of bygone time are made to give way before the progress of modern improvements, which by many will be thought by no means an amiable feature in the pursuits of modern architects.

Over the whole surface of the sand, when the peat had been removed, a slab of concrete, four feet in thickness, was thrown, and the building was thus permanently secured from all risk of subsidence from any defects in the nature of the subsoil.

The rise of the tidal waters up the Victoria-street sewer became a matter of grave consideration. Equally so did the desirableness of giving the least amount of elevation to the ground floor above the line of the adjoining streets employ the attention of the architects. They ultimately fixed the ground floor level at seven feet above the paving at the entrance as the height which would secure the dryness of the basement floor and afford a sufficient elevation for the great kitchen (16 feet high), and this level gave an opportunity for obtaining mezzanine-rooms over the other parts of the basement where the smaller divisions occurred, and which was taken "advantage of" for securing the necessary auxiliary rooms and offices immediately adjoining and above those in which the greater culinary operations were to be carried on.

The necessary height of 17 feet 6 inches given to the other large apartments, such as the coffee-room, great banquetting-room, and eastern-room, being an unnecessary elevation for the smaller rooms on the western side of the entrance, it was determined at once to "dare criticism," and to design the ground floor façade of the edifice with different ranges of string-courses and window openings on either side the principal entrance; and they have had no reason to complain of the criticism which has arisen, for it has proved that the "general eye" is more forgiving for wants of uniformity in parts, when necessity and fitness concur in demanding such a deviation from the established rule, than they could have given it credit for.

By the arrangement above named they were enabled to obtain three floors of rooms on the west side of the centre, when they had but two floors on the eastern side; the middle floor, on a level with Victoria-street (also reached by descending a few steps from the centre hall), and the upper floor raised 6 feet above the level of the hall, and reached by ascending three steps from the half space of the principal staircase, from which extends a central corridor to the west end of the building.

The whole of the western half of the building is let to the India Board at a rental of £5,000 per annum, and the arrangement of this portion in the way it was planned, although accidental, has been such as to enable the Hotel Company to acquire the most valuable connection and rental, and which leaves a complete hotel in the other part of the structure. Four rooms in depth, from front to rear, are obtained by planning three small internal courts (30 feet in length and 20 feet in width), and thus the accommodation of this wing of the building is swelled to upwards of 160 sitting and bed rooms.

The space of 4 feet 6 inches, which has been left between the top of the concrete and the level of the basement-paving (for raising it out of the way of the tidal-water), is made available for affording the means of cleaning out the drains, smoke flues from all the cooking stoves, water and gas pipes; and to make the system of drainage more available, iron moveable covers are put on all the drain pipes (which it should be stated are of cast-iron), and a gangway is left through all the sleeper walls; thus, by the removal of the Yorkshire stone "ways" (provided in the floor) a man may pass all over the foundation without any further interruption of the surface.

This space is also used as a reservoir for cool air, for the supply of the kitchen, to which it is admitted by large gratings under the cooks' tables.

As may be supposed, the surface under the floor exhibits a perfect network of pipes, flues, and drains.

Independently of waterclosets and bath-rooms, larders, &c., &c., there are 286 rooms to let in the hotel 70 water-closets and 14 bath-rooms, the larders, and store-rooms of various kinds occupy the vanities under Victoria-street, and are rendered immediately available by the area between them and the kitchen and offices being covered with glass.

The original contract for the building was £68,966, but the cubical contents was extended by the increased surface subsequently obtained. The fitting up a portion for the India Board, the fittings of all kinds, and other circumstances, over which the architects had no control, produced eventually an increased expenditure, making the total cost about £97,000.

Of the general features of the façade it is unnecessary to speak; whatever defects it may have, are now far over determined; and whether the opinion be favourable or unfavourable will very much result from the previous predilections and particular tastes of the critics. The architects, however, claim for themselves the credit of having shown some desire to construct such a building as, while it was suited to the peculiarities of the site, would possess at least some indication of "high art," untrammelled by conventionalities, and they may, perhaps, refer to the mansard roofing as proof, at least, of the latter statement.

It has not been without some anxiety that they have waited the "growing up" of the business of the hotel, to be informed, from actual experience, if the outlay which has arisen from its strictly artistic and ornamental features, beyond what was actually necessary for providing the simple required amount of accommodation, would or would not be sanctioned by the actual "money return" arising from the particular action of this part of the construction; the result has relieved them from any such anxiety, and they believe that the amount of such work has had its special revenue-producing effect.

The convenient arrangement of the parts of the hotel received careful study, and the more obvious necessities of adapting the larger and smaller divisions of the building to their respective purposes—planning the greater part of the bed and sitting rooms communicating directly with one another with double doors, and at the same time having separate entrances from the passages; arranging for the rooms to be let apart for committees, arbitrations and other business purposes, with external approach; providing sufficient waiters' rooms on the several floors; baths and waterclosets; and withal, taking care that these were sufficient, but not "in excess" of size, or that there was not any unnecessary room lost in the passages, and that all the stories which it was possible to obtain, but at the same time that sufficient height was given to each, and that thus the greatest revenue would be produced. They had then to plan the great coffee-room, banquetting-hall, ladies' coffee-room, &c., convenient in situation, and ready of access, and having at the same time taken care that the kitchens (and all their auxiliary apartments) were conveniently placed, so as to be easily overlooked by the manager. The plans exhibited to the meeting will show what these arrangements are—a matter not easily understood in the building itself, since it has been partially rearranged for the India Board.

Having had their attention turned to matters of ventilation in regard to public buildings during a long course of years, in their first consideration of the design for the present structure a general system of artificial ventilation received anxious consideration; but, looking at the matter in all its bearings, with reference to the daily changing circumstances of an hotel, they determined to limit all artificial means of removing heated or vitiated air to the coffee-room, great banquetting-room, some of the water-closets and the kitchen, and this they have been enabled to achieve by generating a great up-draught in the usual way with the furnace heat, and thus to make it self-acting, avoiding the "danger" of subsequent neglect or disarrangement too common in all such ventilating undertakings when solely for ventilating purposes.

This has been done as follows:—An "awkward" spandrel piece, formed by the irregularity in the shape of the "site," is cut off from the plan and formed into a great smoke and ventilating shaft; it has a horizontal area of 48 feet, and although a passage intervenes between this and the great kitchen range, all the smoke and heat are carried over the passage into a funnel 1 foot 3 inches in diameter, reaching from the basement to the top of the brick shaft above the roof of the hotel; and running up the centre of the before named brick shaft are carried two other funnels, into which are collected the heat and smoke from all the charcoal and coke stoves, ovens, hot plates, steam and hot-water boilers, and by this means so much heat is radiated from the iron surface of the funnels in the space round them in the brick shaft as to create a continual strong "up-draught," and into which, at various places, horizontal flues communicating with the various rooms and places before named have their termination, and so the continual "sucking up" of the heated and vitiated air is going on night and day, and "cool" air is admitted to the kitchen from the spaces before named under the floor, and to the other apartments by means of Moore's ventilators, or the opening of the doors or windows.

We may add, as a practical remark, with regard to this matter, that we believe that the peculiarities of an hotel make any other mode of artificial ventilation unsuitable; other architects may carry our present ideas out more fully and better, but we recommend them to avoid any peculiar general system of ventilation, although applicable to other public buildings.

The floors throughout the building (with the exception of two or three rooms in the basement mezzanine), are entirely of fireproof materials, (vide full sized section.)

The construction of the floors, it will be seen by reference to the section, is as follows: Wrought-iron rolled joists, 7 inches in depth, with flanges on each side for carrying the laths to support the concrete, with bearings varying up to 17 feet 6 inches in length, carried either by plate box girders or by cross walls, were placed two feet apart, and fir laths, 1½ inch square, were dropped on the flanges; upon these were laid five inches of concrete, composed of one part of ground blue has lime, five parts roughly screened Thames gravel and fir fillets 1 by 4 having been first fixed round the margins of each room for securing the carpets, a flooring was made by floating, firstly, a thickness of three-quarters of an inch of Portland cement and sand in equal parts; and, secondly, when the same was quite dry, finishing with three-quarters of an inch of pure Portland cement, and to the walls was added a skirting of Keen's cement.

Besides the fireproof character which this mode of construction gives the building, a freedom from the harbouring of insects was also anticipated, as well as the absence of noise, and we believe that in all these respects it has been found to act admirably.

The inconvenient transmission of sound from floor to floor (the great evil found to exist when brick arches, or concrete alone, however thick are used), determined them to provide an entirely (and in every sense of the word) independent ceiling throughout every floor of the building, and although this (being formed in the usual way, by binders and ceiling joists, lathed and plastered) was in itself an inflammable construction, yet with the cement floor and skirting over it, and cased as a ceiling is, by lime and hair plasterings, out of the reach of any accidental common cause of fire, it is not thought by the architects to take much from the fireproof quality of the structure.

The great fireproof quality (next to the floor) arises from what would be quarter partitions in other buildings. Throughout this building (with very small exception) the partitions are composed of Beart's perforated bricks set in Roman cement; and such was the strength of the iron joists and plate girders on each floor, that they commenced carrying up these walls in the upper floors first, and so to the one pair, even over the large voids of the great dining-room and coffee-rooms, as by this means was avoided any evil from the deflection of the wrought-iron work when loaded.

These half brick walls, when rendered with lime and hair on each side, are better non-conductors of sound from room to room than the architects had expected, and are in all respects a most successful mode of treating thin internal partition walls.

The other great fireproof principle is that of carrying up all the main cross walls through the roofs, and treating them in every respect as party walls, except with regard to necessary doorways and dressings, and these being away from any other inflammable materials (the floors and skirtings being of cement), no great danger of the spread of fire can arise.

The strength of the floors has had a very unexpected and severe test, in consequence of the occupation by the India Board; for they found upon a previous calculation that they required to place a no less weight than 227 tons of books in the upper floor, and which, when distributed, gave no less than 12 tons upon the floor of each room, with joists having upwards of 16 feet bearing; this the architects were able to assent to, for, upon calculation, they found them capable of carrying for a continuance 16 tons.

It was part of their original design that an ascending carriage should be supplied the hotel, for reaching the upper floors; that it should be capable of carrying up persons day and night, at any moment; that this should be done with the greatest dispatch, free from danger, and that, as much as possible, noises in the working should be avoided; also that it should not occupy much room, or by means of furnaces or flues, occasion any unnecessary heat in the building. Taking all these circumstances into account, they determined upon one of Sir William Armstrong's hydraulic machines as the contrivance most suitable for the purpose.

The Chelsea Waterworks giving a water supply of sufficient elevation for working the ram, they obtained an estimate from Messrs. Carricks, who had executed the various smaller lifts for the hotel; but having under the general contract only provided the shaft, the reservoir to contain 6,000 gallons of water on the top of the building, and another above the basement floor, so that the water after use would not run to waste, but be re-used in the culinary part of the establishment, this method of transit was determined upon, but the contract for completing the hoist still remains in abeyance.

The perfect safety of an apparatus of this kind became necessarily a matter of earnest consideration to the architects, as besides the constant superintendence of the conductor, who was to ride up and down with the passengers, and by pulling the rope (acting on the valve) would stop the cat at the floor intended to be reached, a further arrangement to avoid personal risk from the breaking of the chain was necessary, and Mr. Carrick (if permitted) will explain the arrangement of his safety check to prevent any danger arising therefrom.

The means of communicating readily, and, to a certain extent, noiselessly with the various waiters, was considered of great importance, and, thanks to the inventive faculties of this inventive period, the architects found various new modes of doing this; but in the

* Read before the Institute of Larch Architects, on the 3rd instant, by ANDREW MOSELEY, Fellow.

pneumatic system of belhanging, one at once adaptable to their purpose, as by an arrangement of that apparatus to tablets containing the number of the rooms, they have been able to produce in the building a nearly noiseless, durable, and most effective system of communication. This is carried on by means of a piston, which, exhausting the air in a small tube, releases a catch holding up a tablet on which the number of the room is placed, and, at the same time (at the station of the tablets near the various waiters' stations) striking a small bell.

After a consideration of the electric bell apparatus, and the old wire crank and tablet system, they have reason, now the actual experience of its operation has been tested, to congratulate themselves on the success of the apparatus, and they have requested Mr. Thom, the patentee, to attend the meeting to illustrate what they have briefly said on this subject.

An extended application of speaking tubes has been made, which, besides being attached to the lifts, are carried from the manager's, housekeeper's, clerk's, cellarman's, clerk of the kitchen, hall porter, coffee room, &c., &c., and to all the various parts of the structure to and from which messages are likely to become necessary, and the ease, quiet, and dispatch which these afford "in the working" of the hotel cannot be over-estimated.

LONDON BRIDGE RAILWAYS TERMINUS HOTEL.*

IN accordance with a request from your active secretary, I have the pleasure to submit a few particulars with reference to the London-bridge Railway Terminus Hotel, now being erected under my direction.

I should not have ventured to offer any description of this building, except as a supplement to the paper of Mr. Mosely, as I am not aware of any novelty of arrangement or construction worthy of the attention of the Institute.

It appears that London, which has hitherto been badly supplied with hotel accommodation, is at last making a move in the right direction, and constructing buildings more consistent with the requirements of the numerous travellers who are constantly arriving at, and departing from, its great metropolitan terminus.

It has been said, with reference to the hotel in question, that the extension of the railway to Charing-cross and the City would lead London-bridge without customers, but I do not think that the shareholders need apprehend any depreciation of their property from this cause. The extension will bring from the South Western Railway and elsewhere as many as it takes away, and the Brighton Company, at the present moment, are giving notices for the extension of their London-bridge station. It appears to me that London-bridge must always continue one of the great railway termini of the world.

The building stands at the south-west corner of the Brighton station, with frontages to Joiner-street and St. Thomas's-street.

Level of the streets is about 25 feet below the railway level, and in designing the building it was necessary to keep the principal floor on the level of the platform or thereabouts.

The principal entrance on the lower level is from St. Thomas's-street, and with the exception of the entrance-hall, principal staircase, and manager's offices, the whole of the ground floor is appropriated to the domestic offices of the hotel; the basement being devoted almost entirely to cellars.

The following is a summary of the accommodation provided:—

Basement.—Wine, beer, coal, and ice cellars, and a large room for servants; dining-room, furnace for baths, and warming apparatus.

Ground Story.—Entrance-hall and staircase. Secondary staircase from Joiner-street, and club entrance, hereafter referred to. Manager's offices and bar. The remainder is appropriated to the offices consisting of kitchen, sculleries, larders, still-rooms, pantries, servants' hall, &c., &c.; the two portions which are bisected by the entrance-hall being connected together by a passage-way under principal staircase. The north-west angle is appropriated to the tap, being immediately at foot of the steps leading from the railway to Joiner-street, and will, no doubt, have plenty of customers from the porters employed on the railway.

One-pair Story.—The principal part of this floor is proposed to be devoted to the use of a Southwark club (which is much wanted by the professional and commercial classes in the Borough), and will yield a large rental to the Hotel Company. The club coffee-room will be supplied from the hotel kitchen, and will be another considerable source of profit. The rooms for the club consist of coffee-room, dining-room, morning-room, smoking-room, and billiard-room, with private rooms, &c., &c. The remainder of this floor is devoted to the living rooms of the tap, and to the linen department of the hotel.

Two-Pair Story.—Being the railway level comprises the principal coffee-room, 70 feet by 29 feet; ladies' coffee-room, 30 feet by 30 feet; and library and reading-room, 29 feet by 25 feet, with the usual serving rooms and pantries, and sundry private rooms. The principal staircase from the lower level terminates on this floor, and a staircase in both wings is continued upwards. An entresol floor is obtained in the wings, making up the height of the large rooms. The remainder of the stories are divided in the usual way with bath-rooms, waiting-rooms, &c. The total number of rooms of all sorts, exclusive of cellars, is 292. The frontage to St. Thomas's-street is 130 feet, and that to Joiner-street is 97 feet, and the total height from pavement of street to ridge of roof is 112 feet, and to summit of terminals over ventilating shafts, 150 feet.

The Company are possessed of additional land in St. Thomas's-street, on which it is proposed to erect a large public room, with additional bed-rooms over.

I shall not attempt to describe the style of the building. It forms a considerable feature in the architecture of Southwark, and, being freely treated, I leave it to the ingenuity of the Institute to find a name.

The building is constructed with white bricks and Portland stone, and the roof is covered with green slates.

I fear that this dry description of a building will not sufficiently interest the members of the Institute, and as no great difficulties have arisen in the construction, no great interest will be attached to the description thereof.

On excavating for the foundation, we found, at about 12 feet from the surface, a layer of soft running sand, about 4 feet thick, very full of water. The whole of this was taken out, and a solid bed of hard gravel reached. The water was kept within bounds by hand-pumps, and the trenches filled with concrete made with blue lias, which was carried up above the ordinary level of the water, which was somewhat affected by the tides. Nothing of any interest was found in the excavations, except a few pieces of broken pottery, sent herewith. The footings of main wall are 6 feet thick, reduced to 3 feet in thickness, and a layer of asphalt 1-inch thick laid over the whole surface and on the vertical faces of the basement walls. The walls are 4 bricks thick up to ground line; 3½ bricks thick up to two-pair level; 3 bricks thick up to four-pair level; 2½ bricks up to cornice.

It has not been attempted to make the building fireproof. The staircases are of stone throughout, and the corridors and passages are constructed with tile arches and wrought-iron girders, paved with 3-inch Portland. The basement is entirely covered with tile arches and wrought-iron springs, and the ceiling of kitchen is also formed with tile arches. The arches are all in three thicknesses, set in Roman cement.

The only point requiring special consideration in construction was in relation to the girders over the large rooms, which were of considerable span, and had of necessity to carry the division walls and chimney-breasts of six stories, with the floors, tile, arching and paving of corridors.

It appeared, therefore, to be very desirable to introduce girders at every floor, to reduce the weight on each girder as much as possible, and so that, in the event of any accident arising from fire or other causes, every floor should be independent and self-supporting. The wrought-iron girders are placed immediately under each of the 9-inch division walls, the flanges of which are afterwards built up and plastered over.

A parallel girder of smaller dimensions acts as a trimming girder; a 4-inch landing from top of main girder to trimming girder, perforated exactly for the flues, carries the projection of the chimney-breasts, and the hearths are afterwards formed on top of landings with tiles.

The whole of the girders were introduced and fitted together before the sub-division walls, chimney-breasts, &c., were built. This was found a convenient arrangement for handling and placing the long girders in position. The girders had a bearing at one end on main wall, and at the other on cast-iron stanchions, which were also built into the thickness of the 9-inch division walls. As these girders passed through the ventilating chambers, apertures were left in the web at the proper points. The greatest estimated weight on one of these girders was 53 tons in the centre, and it will, therefore, be clear that a considerable sectional area was necessary, the bearing being 28 feet. The heaviest girder weighed 14 tons.

The ventilation is provided for as follows:—The kitchen department, smoking-room, and rooms on one pair are connected with the shaft shown on plan, the centre of which is occupied by a galvanised iron tube conveying the smoke from all the furnaces and fires in kitchen department. The remainder of the building is ventilated by means of chambers formed between the floors and ceilings of corridor. These are connected with vertical shafts in each wing. A powerful hot-water coil is introduced in these shafts, heated from the furnace which supplies the baths and hot-water service, so that it will be continually in operation winter and summer. These shafts are continued up, and form the terminations of the pyramidal roofs of pavilions. The ventilating chambers are formed between the tile arches and the paving of corridors. A warming apparatus in the basement will suffice to keep the staircases at a moderate temperature. An ample supply of external air is admitted to every fireplace. Cistern room to the extent of 25,000 gallons is provided, distributed over the building, and, as the high service will not reach the upper stories, a steam pump is provided in scullery in connection with the general steam apparatus, which pumps the water from the low-service main.

Mr. Billing's patent iron throat valves and terra-cotta terminals have been fixed to the chimneys, for the prevention of smoke.

The excavations were commenced in December, 1860, but the old buildings on the site were not cleared away until January, 1861. The works have been progressing steadily, and notwithstanding the interference from the strike, the building has made rapid progress, thanks to the well-known energy and intelligence of the contractors, Messrs. Lucas, whose zeal and ability need no further remark from me. The total quantity of bricks used in the construction is three millions; the quantity of wrought iron, 200 tons; the quantity of cast iron, 80 tons; and 15,000 cubic feet of timber. The whole of the bricks and mortar have been raised by a hoist constructed in the well-hole of the eastern staircase and burrowed on each floor to the position required. This hoist was worked by a horse, who had the run of a back street, and the length of which just admitted of the materials reaching the room. The stone was raised by a small steam-engine, and the whole of the ironwork was lifted inside the building and placed in position without the slightest accident.

The whole has been carried on without a clerk of the works, under the immediate superintendence of my active and intelligent assistant, Mr. Harris.

I have great pleasure in bearing testimony to the skill and intelligence and ready attention of Messrs. Lucas's principal foreman, Mr. Steel, and to the energy and obliging and hearty assistance of the foremen of the several branches of work.

The work is being executed at a schedule of prices. The total cost will be £60,000, equal to about 1s. a cubic foot, including stoves, bath and bell work, gas warming, and ventilating arrangement, and everything complete except furniture. The kitchen fittings, bath, bell, and gas work, warming apparatus, &c., are being ably executed by Messrs. Jeakes and Co., and the carving has been effectively executed by Mr. Toltm. The building was commenced in January, 1861, and will be completed and ready for opening concurrently with the Great International Exhibition, in May, 1862, being a period of sixteen months.

I trust the Institute will not consider I have occupied their time unnecessarily with this uninteresting description. I only hope it may be useful as a means of comparing the details and arrangement of this with other kindred buildings.

THAMES EMBANKMENT COMMISSION.—SURREY SIDE.

ON Thursday, the 27th ult., the Commissioners re-assembled at the offices of the Commission in Victoria-street, Westminster; Captain Douglas Galton, of the Royal Engineers, in the chair; and took into consideration five plans for embanking the Surrey side of the Thames. The first plan submitted was by Mr. W. A. Brooks, C.E. He proposed four quays for the line of embankment. The first from Fore-street, Lambeth, to Westminster-bridge; the second between Westminster-bridge and Bankside, Southwark; the third off St. Saviour's Dock, Bermondsey; and the fourth from the Thames Tunnel to King and Queen Stairs, Rotherhithe. The estimated cost of the embankment from Lambeth Palace to Bankside will be £162,492. Mr. Anstin proposed a 30-feet embankment wall, with conduits into which the sewers would discharge, combined with docks between the embankment walls. Mr. T. E. Weller's plan consisted of a solid embankment from Westminster-bridge to Blackfriars, following the present line of the river frontage. Mr. J. Lightfoot's embankment would run from Vauxhall to Lambeth, with a roadway in front of all the premises to Rotherhithe, with docks between the roadway and the premises to London-bridge. Also, a new bridge opposite the Horse Guards, and a new street to unite York-street and College-street. Mr. Giles suggested an embankment from Vauxhall to Lambeth-bridge, and a roadway 60 feet wide to Bankside, and a new road from Nine-elms to Lambeth.

THE LATE FALL OF HOUSES AT HACKNEY.

AT the last meeting of the Metropolitan Board of Works Mr. G. Legg, district surveyor, made a report respecting the recent fall of two houses at Hackney. He stated that the two houses were respectively five stories in height, and erecting at the very base of the embankment of the North London Railway, a few yards from the Hackney station; that the erection was pressed on with expedition, and that the front of the west house and part of that of the east house fell into the buildings. The causes of the accident he considered were the proximity of the buildings to the railway, the vibration arising from the breaks acting upon the trains at the spot, the greenness of the work, the incompleteness of the work, and the large number of men stated to have been at work on the front that first gave way. Also, the buildings proceeding at this time of the year, and necessarily affected by the frost and rapid changes of the weather and temperature, together with the omission of due supervision by the foreman on behalf of the builder, and the collars to the roof not being in. It was given in evidence that six men were engaged running the cornice of the front and on the two-pair story, and three fixing a triple-light sash frame on the one-pair story; these operations proceeding at the same period, the front buckled, and this caused the accident. Remarks had been made on some of the materials, which were of the usual mixed character employed by speculating builders, and of the same description as the other eight houses erected by Mr. Amos in continuation; the party-wall was standing five stories high without the slightest support but the two houses, thereby showing that the remarks were unnecessary. The building was erected up to the one-pair story during the period Mr. Legg's predecessor held office, and stood for a short time prior to the builder proceeding with the works.

* Read before the Royal Institute of British Architects, by Mr. HENRY CURREY, on Monday, March 3rd.

† Plan and view will be found in Vol. VII., pp. 248, 249.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

An ordinary general meeting of this body was held on Monday evening at the rooms, 9, Conduit-street, Regent-street; Mr. M. DIGNY WYATT, V.P., in the chair.

Mr. T. HAYTER LEWIS, hon. secretary, read the minutes of proceedings at the last meeting, which were approved of and confirmed.

New Fellow.—Mr. George Aitchison, of Muscovy-court, Trinity-square, having been balloted for, was duly elected a Fellow of the Institute.

Donations.—Mr. J. BELL, hon. secretary, announced several donations, including a part of the "Dictionary of Architecture."

The CHAIRMAN called attention to the value of this work, the conductors of which invited the co-operation and assistance of the members of the profession in bringing it out.

Professor KERR could state from experience the Dictionary contained the most valuable information on the subject of architecture.

A vote of thanks was passed to the donors.

The Competition for the Façade of the Florence Cathedral, and the Prince Consort Obelisk.—The CHAIRMAN said that before proceeding to the immediate business of the evening there were two subjects to which he wished to direct the attention of the meeting. One was the fact that the Council of the Institute had been in correspondence with the Italian Minister in London, and the result was that a series of tracings sent from the Government of Italy, showing the modes of operation adopted at the Cathedral of Florence, would be exhibited at the rooms of the Institute, so that they might be examined by all who might wish to compete for the façade of the Cathedral more conveniently than at the rooms of the embassy. The second subject to which he wished to draw their attention was a very interesting one. He held in his hand a letter from one of the most respected members of the Committee appointed by her Majesty to make suggestions as to the best mode of carrying out the proposed erection of an obelisk to commemorate the late Prince Consort. The object of the letter was to invite the aid of the Council, and through the Council the Institute generally, in making suggestions as to the supply of the best kind of stones, with reference to quality and colour, whether of granite or other stone, and the cost of conveyance by land or sea from places where it was to be had to London. Now, it was just possible some of the members of the Institute might have practical experience on the subject, and if any gentleman possessed of information on the subject would communicate with the Council they would be glad to place such information at the disposal of the Committee appointed by her Majesty, and the labours of that Committee would, he was sure, be looked forward to with the greatest interest by all.

Mr. BOULNOIS wished to know if there was any objection to the letter being read.

The CHAIRMAN said it was a privileged letter to some extent, but he had laid the substance of it before the meeting.

Mr. BOULNOIS thought it would be well to appoint a committee to consider the subject of the letter, to make full investigation, and lay the result with the greatest possible authority before the Council.

The CHAIRMAN said the letter had been discussed in the Council, and it was thought the best plan would be to ask the members generally of the Institute to give information, which could then be collected and presented in a permanent manner.

Mr. BOULNOIS thought this was a matter upon which the Institute ought to speak out with force and authority.

The subject then dropped.

The Institute Prizes.—Mr. T. HAYTER LEWIS, hon. sec., said at the private meeting of the Institute, held on the previous Monday, the envelopes containing the names of the gentlemen to whom prizes had been awarded were, by mistake, not opened. That was partly his fault, but what had taken place was as well, perhaps, because some of the letters unopened referred to designs which were commended, but to which prizes were not awarded. Since Monday the gentlemen whose designs were commended had been asked for permission to publish their names, and, with one exception, such permission had been received. The exception he referred to was the author of the design signed "Humber," but if that gentleman was in the room, and wished his name to transpire, it would be well. (To this no response was given at the time.)

The CHAIRMAN then opened the sealed letters bearing mottoes corresponding to those on the prize designs, and announced the names of the successful candidates, which were as follow:—

1. The silver medal of the Institute, with five guineas, to Mr. Frederick R. Wilson, Associate, of Alnwick, for his drawings and description of Breckburn priory, Northumberland. 2. Neither of the designs for the Soane medallion having been considered of sufficient merit to entitle the author to the prize offered, the prize in books, of the value of five guineas, for the best design submitted, was found to have been awarded to Mr. Charles H. M. Mileham, of 18, John-street, Bedford-row. 3. The ex-President, Professor Cockerell's prize of ten guineas to Mr. A. W. Davis, of 15, Park-side, Knightsbridge, for his design for a market house; the Institute book prize to the second in merit to Mr. R. Phœnix Spiers, Associate, of 89, Upper Ebury-street, Piccadilly, for his design for a villa; the design for a chapel, by Mr. William Hallam, student, of Kirton-in-Lindsey, Lincolnshire, and that for a villa, by "Humber," were commended. 4. The prize of ten guineas offered by Mr. Tite, M.P., F.R.S., President of the Institute, to Mr. Henry S. Legg, Associate, of 6, South-square, Gray's-inn, for his designs for a railway station and a town-hall. 5. The students' prize in books to Mr. R. H. Carpenter, student, for his design for a dispensary for a manufacturing town. The designs for the same subject, by Mr. Samuel Fry and Mr. J. T. Perry, students, were commended. The prize in books for the best series of monthly sketches to Mr. Samuel Fry, student; the series by Mr. George Baxter, Jun., were commended.

The Westminster Palace Hotel.—Mr. ANDREW MOSELEY (Fellow) then read a paper entitled "Some Particulars regarding the Plan and Construction of the Westminster Palace Hotel." The paper is given elsewhere.

The London-bridge Railway Terminus Hotel.—Mr. JAMES BELL, hon. sec., then read a paper by Mr. Henry Currey (Fellow), entitled "Some Account of the London-bridge Railway Terminus Hotel;" which will be found in another page.

The CHAIRMAN having invited discussion, called upon Mr. Carrick to give some account of his hydraulic hoist, which was referred to in Mr. Moseley's paper.

Mr. JAMES CARRICK (engineer) said, the principle or motive power of the

hoist was an application of a patent of Sir William Armstrong—viz., the placing of a hydraulic ram between sheave blocks. The car, being attached to one end of a chain reeved over these blocks, travels through a space equal to the stroke of the ram multiplied by the number of pulleys over which the chain is passed. Supply and exit water tanks for working the ram are provided and placed, the one at the top of the building and the other at a lower level, in which the discharged water is utilised for the kitchen service. The available head of water is at present 75 feet, which may, however, be easily increased; the supply pipe is 5 inches diameter, and the diameter of the ram 26 inches. The tanks are of the cubic capacity of 4,000 gallons, and are filled three times per day from the water company's main, providing a supply for 120 ascents per day. The lift is designed to carry two persons and their luggage and the attendant, and is started and stopped at the respective floors by the attendant pulling a small chain, which opens and shuts the valve of the apparatus. A hundred gallons of water are required for each ascent of the car; but no water is required for its descent, the ram being so arranged as to descend by the counterbalance of the car's weight. A safety apparatus is provided and attached to the car, which consists of two teetled or ratchet-faced eccentrics placed on the end of the shaft or cross bar by which the car is suspended. The eccentrics are kept out of action by two powerful volute springs, but in the event of the main chain breaking they are immediately freed, and their force directed against the eccentrics which bite the guide bars, and so suspend the car.

In answer to a question, Mr. Carrick said the car would ascend in half a minute.

Mr. THORN explained a model on the table representing his system of bells (referred to in Mr. Moseley's paper.) In large mansions the bell wires were always getting out of order, and that led to his invention, by which all such disorder was prevented. He first tried his invention at the Westminster Palace Hotel, and it had been found highly successful. There were now seven miles of pipe laid by him in that hotel for 400 bells. The bells would cost from 25s. to 35s. each. He believed he was about to be engaged to supply the house of Lord Overstone with these bells.

Mr. F. H. FOWLER thought some of the arrangements at the Westminster Palace Hotel had acted well, and admirably answered the purposes intended to be secured in hotels on the continent. The principal thing was to have every floor perfect of itself, so as not to have the waiters going up and down. The waiters' rooms in these hotels should be placed as far as possible in the same position, and the bells placed in that locality where the waiters were, as had been carried out very successfully at the Great Western Hotel. Also accommodation should be made for the housemaid and for the taking up of coals by hoist without interfering with the principal staircase, and further accommodation of a similar character should be made, especial attention being paid to the coffee-room. Those were some of the great principles upon which these hotels should be constructed, and he believed that the points involved were very well carried out in the Westminster Palace Hotel, and in the London-bridge Railway Terminus Hotel, and he congratulated Mr. Moseley in having completed so great a structure as the former.

In answer to a question, Mr. MOSELEY said that in some cases kitchens had been placed in the roof, but there were objections to such an arrangement.

Mr. C. F. HAYWARD supposed the hoist was not meant to supersede the common staircase?

Mr. MOSELEY: Certainly not, but it was meant for the use of persons who preferred going up in that way to going up the ordinary staircase.

The CHAIRMAN supposed the perforating shafts for heating chambers would lead to a great consumption of fuel.

Mr. MOSELEY said it was not so.

The CHAIRMAN remarked that the general argument was that where there was an enormous quantity of heat going up a flue the stove was imperfectly constructed, and that there was, consequently, an imperfect combustion.

Mr. C. F. HAYWARD observed that the Marine Barracks at Woolwich, which was an excellent building, when erected, were laid with plaster floors, but those floors were being gradually taken up because of the cold. He should like to know if plaster floors were inconvenient, as such floors were very common.

The CHAIRMAN said one of his offices at the Indian establishment had these floors, which he covered with a thick felt, and the old Indians, though very sensitive gentlemen, had not found fault with the arrangement.

Mr. C. H. SMITH did not think a plaster flooring was objectionable, for a plaster floor was to a certain extent a better conductor of heat than a wooden one, although cold might be caused by a difference of temperature.

Mr. HAYWARD thought plaster floors were uncomfortable; he knew a case in point in Nottinghamshire, and the case at Woolwich to which he had referred had been thoroughly investigated, and the plaster floor was taken up and replaced by other materials.

Mr. BOULNOIS said the great difficulty with plaster floors was to prevent oil and dirt getting into them, which rendered it necessary to replace them. It was necessary, particularly in hotels, to clean the floors sometimes, but when that had been done several times cement would change its character, and eventually the floors would have to be taken up and replaced by some other materials. He knew a case of a plaster floor which had lasted ten or twelve years, but he thought it would have to be taken up some time or other.

Mr. FOWLER said metallic lava was a very useful material in the construction of floors.

Professor KERR moved a vote of thanks to Mr. Moseley and Mr. Currey for the papers read that evening. He was sure he spoke the opinion of every one present when he said that if anything was of more use to them as architects than another, it was bringing before them matters of detail, which were of great interest to them. And he thought Mr. Moseley might lay them under more obligations if he would give them some further information with respect to the plan of the Westminster Palace Hotel, particularly with regard to the basement, if he would point out to them where the kitchen was, how it was reached, where the larders were—a most important point in a London hotel—how the general arrangements with regard to offices were managed, and how the communication between the kitchen offices and the dining-rooms was carried out. It was of great importance in an hotel that facility of communication should exist between different parts of the building, and he should like to know how all this was effected in the new hotel at Westminster.

Mr. MOSELEY then referred to plans on the walls, and explained the arrangement of the rooms in the hotel, pointing out particularly the positions of the rooms for the manager, housekeeper, domestics, the visitors, servants

of the visitors, dining-rooms, bedrooms, &c., &c. The accommodation included five or six hoists for raising luggage, provisions, coal, letters, &c., besides the great hydraulic hoist for taking up visitors. He also stated that it was proposed to erect an hotel at Liverpool, to accommodate 800 persons; at present the scheme was *in nubibus*, but it was hoped the proposed hotel would be erected some day.

Mr. JENNINGS seconded the vote of thanks for the valuable papers which had been read that evening. The material to be used for floors was a matter that all architects should attend to, and he thought the material to be used for the formation of floors would be a matter for the consideration of future builders of hotels.

Professor KERR said Mr. Currey, in his paper, stated that he had made no attempt to make his hotel—that at the London-bridge railway terminus—fireproof—(A Voice: He said so). That seemed a most extraordinary thing. The essence of fireproof construction was not the making a building fireproof by the use of incombustible materials, but to make the fabric in such a way as that a fire should not be drawn through a hollow space and communicated to other portions of the building, thus leading to its destruction.

Mr. MOSELEY said that in the case of his hotel there was no chance of draught.

The CHAIRMAN, as representing the tenants of nearly one-half of the Westminster Palace Hotel, could bear his testimony to the soundness and substantial character of the building, which was tested by the great weight placed upon it by the Council for India. In this hotel the soil drains were made in flanged iron pipes, which was a great advantage, and kept away smells. Another point of importance was the very satisfactory way in which the whole had been floated on the surface, as it were, of a very bad bottom. He had not seen any sign of sinking in the walls, and, considering their thickness, he thought it was satisfactory the building had stood as it did. The principal entrance and staircase formed a very pretty part of the building.

A vote of thanks having been passed by acclamation, the meeting separated.

ARCHITECTURAL ASSOCIATION.

AN ordinary general meeting of this body was held at the Rooms, 9, Conduit-street, Regent-street, on Friday evening; Mr. BLASHILL in the chair.

The CHAIRMAN stated that the Association were now possessed of a book-ease, and would be glad to receive donations of books from the members and their friends. He said he had received a letter from Mr. B. A. C. Herring, stating that he was prevented from attending the last meeting to read a paper in consequence of illness, and expressing his willingness to read the paper on any vacant evening during the session.

Surface Decoration.—Mr. R. O. HARRIS then read a paper on "Surface Decoration," which will be found in another portion of this Number.

The CHAIRMAN said they had not much time left for the discussion of Mr. Harris's very talented paper, which contained a large mass of most interesting matter as to the modes of operation for the purpose of producing various kinds of surface decoration. Such a paper would be well followed up by one on design in decoration.

Mr. GEORGI gave some particulars respecting a table-top he exhibited, and which was referred to by the lecturer. The table is a scagliola mosaic, in imitation of Florentine marbles, and is, we understand, to be shown at the Great Exhibition.

Mr. PARAIRE suggested the adjournment of the discussion upon Mr. Harris's paper; and it was agreed that the discussion should be adjourned, and take place on the first evening an opportunity presented itself.

A vote of thanks having been passed to Mr. Harris, the meeting separated.

CAPITALS FROM THE OXFORD MUSEUM.

WE have illustrated, on another page, four capitals, selected from those executed in the new museum at Oxford. The building and its decorative features have been fully described in former volumes.

IRISH MEMORIAL TO THE LATE PRINCE CONSORT.

THE Lord Mayor of Dublin has addressed a letter to the Hon. Charles Grey expressing the desire of the Corporation and citizens that a memorial should be erected in Dublin to commemorate the exalted private virtues and eminent public services of the late Prince Consort. His lordship stated that in all parts of Ireland an equally unanimous wish prevailed that a suitable record of this universal feeling should be preserved. He, therefore, wished the subject of the proposed memorial to be submitted to her Majesty, with a view to receive her gracious sanction. To this communication General Grey has replied in the following terms:—I have the honour of receiving your lordship's letter of the 28th February, and, having taken the Queen's pleasure upon it, I am commanded to say that her Majesty cannot but be deeply touched by the assurance it contains of loyal attachment to herself and of sympathy with her in her sorrow, as well by the gratifying desire expressed to have a separate national monument erected to the Prince's memory in Dublin. It is no slight comfort to the Queen in her affliction to receive this proof of the affection and respect entertained for the Prince by her Irish people, and of their appreciation of his excellence; and though she does not know that any special sanction from her is necessary to enable them to give effect to their wish, she must assure them of her heartfelt concurrence in it, and of her best wishes for its successful accomplishment.

SIR CHRISTOPHER WREN.—At a meeting of the Photographic Society, held on Tuesday evening, Mr. Glaisher, F.R.S., in the chair, considerable interest was excited by the exhibition on the table of a series of photographs illustrative of the works of the renowned architect of St. Paul's.

The Emperor of Russia has just decreed the gratuitous concession of two hundred square yards of land, situated at Great Norkaia, Saint Petersburg, for the construction of a church of the German reformed religion.

Reviews.

The Year Book of Facts in Science and Art. By JOHN TIMBS, F.S.A. Lockwood and Co.

MR. TIMBS' annual volume is, as usual, full of interesting facts concerning topics which have been discussed during the past year. There is also in the volume for 1862 a biographical notice of Mr. W. Fairbairn, with a portrait. Mr. Timbs has so long exhibited an unparalleled industry, combined with good taste, as a collector, that we need do little more than recommend his book to the notice of our readers.

Report on the Vital, Social, and Economic Statistics of Glasgow for 1861. By JOHN STRANG, J.L.D.

THIS annual report by the Chamberlain of Glasgow contains very nearly all the information obtainable on the vital, social, and economic statistics of the city.

At the commencement of the present century Glasgow contained only 83,769 inhabitants; sixty years ago the customs collected at Glasgow amounted to £427 only; but at the last census the population of Glasgow was returned at 446,639; while the customs collected now amount to £924,505. Glasgow is a rising city.

Dr. Strang's report is most comprehensive; he treats on, and gives us facts relating to, the population, births, diseases, mortality, burial, house building, water supply, and many other matters. He tells us that the number of dwelling-houses within the parliamentary boundaries of Glasgow in the year 1861-62, under £5, amounted to 34,503, at £5 and under £10, to 33,120, and at £10 and upwards to 19,956, or to a total of 87,579. And when we compare the gross number of houses of 1859-60 with those of 1861-62, we find an increase in favour of the latter of 4,350. Considering the number of residences altered to places of business, and the vast increase of dwelling-houses erected beyond the limits of the parliamentary boundaries for the accommodation of many of the persons who are employed within the city, the increase seems greater than might have been expected. Under deduction of the persons residing in public institutions, which reduces the population to 389,110, the number to each occupied and unoccupied house is as 1 to 4.4 of the population. These houses are chiefly supplied with water from Loch Katrine. During the year 1860 the water from this highland loch, distributed on the north side of the river, amounted to no less than 18,000,000 of gallons. This prodigious consumption having attracted the notice of the Commissioners, an inquiry was made into the matter, when it was calculated that about 7,500,000 had been daily running to waste through old and leaky taps alone. The measures taken for reducing this waste succeeded so far as to reduce the daily consumption at the midsummer of 1861 to 15,000,000 gallons; but from the period when the Loch Katrine water was sent across the river into the west part of Gorbals the consumption increased to 17,000,000 gallons, and which, when added to the supply from the Gorbals works, made the total daily quantity supplied to the city and suburbs 21,000,000 gallons, or about 46 gallons per head of the population supplied. That this is a very large supply is shown from the following table, which was prepared in 1859:—

Towns.	Population within bounds of Supply.	Daily Supply.	Daily Supply for each Inhabitant.	Cost of Undertaking.	Daily Supply for every Pound expended.	Proportion Supply in Addition.
		Gallons.		£		
London	2,666,917	81,925,842	30.3	7,102,823	11.1	20,000,000
Paris	1,100,000	26,350,000	24	800,000	33	
Hamburg	160,000	5,000,000	31.25	170,000	29.50	
New York	713,000	28,000,000	39.27	1,800,000	15.5	14,000,000
Manchester	500,000	11,000,000	22	1,300,000	8.5	
Liverpool	500,000	11,000,000	22	1,640,000	7	
Leeds	153,000	1,850,000	12	283,871	7	2,000,000
Edinburgh	215,000	4,800,000	22.3	456,000	10.5	
Dundee	96,000	1,750,000	18.2	139,000	12.5	
Aberdeen	65,000	1,200,000	18.4	50,000	24	
Greenock	40,000	2,112,500	52.8	90,000	23.4	
Paisley	48,450	1,021,452	21	60,000	17	

It appears from this table that the daily supply furnished to Glasgow, is, with the exception of Greenock, the greatest among the cities enumerated. In fact, the supply is too great to be properly applied, and has educed among the inhabitants a feeling of carelessness and of waste that will be henceforward difficult to eradicate.

There are three model lodging-houses now opened in Glasgow. One is in Greendyke-street, with accommodation for 134 inmates. The accommodation is a sleeping berth for each person, opportunities for cooking on a hot plate, the necessary cooking utensils being supplied, lavatories with a plentiful supply of water, also soap and towels. There is a large sitting hall, which is supplied with newspapers and periodicals, also a library and reading-room; the hall is well lighted with gas, and comfortable fires are maintained in winter or in bad weather. The charge for this is 3d. per night, or 1s. 6d. per week of seven nights. There are more expensive berths at 4d. per night, or 2s. for seven nights; and at 6d., or 3s. per week. The number accommodated during the last year was 45,749.

The second establishment is in Macalpine-street, and can accommodate 298 males. The home consists of four flats, and has good accommodation for cooking; there is a large sitting-room on the ground floor where the inmates have the use of a small library, newspapers and periodicals—a smoking-room is also attached. Lavatories and water-closets are placed in connection with each ward. The charges are 4d. and 6d. per night, or 1s. 6d., 2s., and 3s. per week of seven nights. The numbers accommodated during the last year were 58,671.

The third establishment is in Carrick-street, which lodges 200 females. The general accommodation in this house is much the same as the males' home in Macalpine-street, the charges are 3d. per night, or 1s. per week of seven nights; a better class of accommodation is provided for 12, at 4d. and 6d. per night. The numbers lodged during last year were 25,231.

With respect to the sewerage of the city, the total length of the main sewers within the municipal boundary is 60 miles, and within the built portion of the

city nearly all the streets are provided with sewers. In the suburban districts of Camlachie, Westmuir, Parkhead, Springburn, and Woodside, there are no common sewers, the open water courses forming the only drainage. The sewerage of the districts of Bridgeton and Mile-end within the built portions of the city is limited, arising from the difficulty of obtaining an outfall without increasing the nuisance in the Clyde above the weir. A survey, however, is in course of being made to provide a remedy for the imperfect drainage of these districts.

Croydon Sewage v. London Sewage.

CONTAINS some remarks on the proposition to discharge a portion of the sewage of the parish of Croydon into a sewer under the jurisdiction of the Metropolitan Board of Works, at Bell-green, in the parish of Lewisham.

CHURCH AND SCHOOL BUILDING.

Winchester Cathedral.—Workmen are engaged in excavating the ground in front of the west end of the church, so that the descent to it shall be by steps at the distance of 10 feet from the building, instead of immediately into the three porches.

Bicester Church.—The sub-scriptions in aid of the proposed restoration of this edifice amount to upwards of £1,250.

Liverpool.—St. Paul's Church, Tranmere.—There is now every prospect of this church being completed by the addition of a tower and spire, designed by Messrs. W. and J. Hay. Mr. Thomas, of Oxtou, who has erected the new church and parsonage at Frankby, now on the eve of completion, under the same architects, is the contractor employed, and has undertaken to complete the work by the 1st of July next.

Decon.—New Church.—It is stated that a new church is to be built for the parish of Withycombe, near the town of Exmouth. One gentleman has offered £1,000, and two others £500 each.

Newmarket.—All Saints' Church.—It having been deemed expedient to add to the sitting accommodation, the old pews have been replaced by open seats. Not a vestige of the old interior woodwork is now to be seen in the church, and the whole edifice has undergone a thorough change in its appearance. The pulpit and reading-desk are erected near the communion rails, one on each side of the church. The side entrance has been bricked up, and a new one opened under the tower; a small sacristy has been erected at the east entrance of the chancel; the pillars of the nave have been cleaned, and a window, with new stonework, has been put in the chancel.

Collingbourne Kingston.—The parish church, which has been closed for repairs, was recently re-opened. A sum (including the value of old material, estimated at £200) considerably exceeding £1,500 has been expended on the restoration. The architect has been especially careful, in carrying out the required improvements, to preserve the original character of the fabric. The fine Norman arcade, dating back as far as the eleventh century, has been restored. The chancel arch has Purbeck marble shafts, supporting foliated capitals. An unsightly gallery has been removed, and, through the munificence of the Marquis of Ailesbury, the belfry floor has been converted into a baptistry. It has a new font, a carved screen, and floor of encaustic tiles. The chancel, which is in the hands of appropriators, has not participated in the restoration, and its appearance contrasts painfully with the other parts of the building.

Lincolnshire.—The church of All Saints, near Epworth, consists of nave, north and south aisles, chancel, and chancel aisle, south porch, and tower at the west end. The chancel has recently been "renovated," but it appears the work done is not faultless, as the plaster in some places is already falling from the walls. The improvement in the chancel having been effected, the incumbent consulted with several parishioners with the view of extending the work to the nave and aisles, the pillars, arches, and walls of which were enveloped in numerous coats of colour-wash that had completely obliterated the work of the Mediaeval architect. In removing the whitewash the stonework was found to be covered with various colours—red, blue, and black. On the west wall a fresco was discovered: the subject of the Judgment was commonly represented on this wall, or over the chancel arch. In removing the soil in the chancel for the erection of the stove a stone coffin was found. In the south wall, near the place of sepulture just referred to, are sedilia. And near the east end of the same wall is a piscina. In the west wall is an aperture, but it can only be seen in the tower: from it a view of the high altar was obtained, and a bell rung therefrom to call attention to the more solemn parts of the service. There are two altar brackets—one in the south and the other in the north aisle. That in the south aisle is enriched with foliage. The circular font, which has been removed from its original and proper position, is of the same date. The tower is late Perpendicular; and the south porch contains some rich work of the same date. All the easternmost windows have been filled with stained glass by Mr. Wailes, of Newcastle.

Northamptonshire.—Disgraceful State of Ringstead Church.—Says a local authority:—"This once pretty and neat-looking church is in a most deplorable state, and is rapidly going to ruin. Two years since it could have been put in complete repair for about £200, but in two years hence it will require not less than £900 or £1,000 to effect an efficient reparation. It has been closed for some time. The gates of the churchyard have had all the rails taken from them; the churchyard wall is falling into the street, and the yard itself is the resort of all the idle and mischievous urchins of the place, who commit every possible act of violence and ill-usage on the sacred edifice. The graveyard is in a most disgraceful state of neglect. There is scarcely a whole pane of glass in the entire edifice, whilst in many places the window-frames have been taken out and flung into the interior of the church, so that the mischievously disposed have not the least trouble in procuring admission into the body of the church and committing acts of sacrilege. The interior of the church presents a most deplorable spectacle. The pavement is strewn with broken glass, remnants of window-frames, stones, brickbats, dust, &c. The stove remains intact, but all the iron piping is gone. The dust-covered pulpit wears an air of utter desolation, and all around is exposed to the effects of wind and rain. The spire exhibits signs of decay, and the walls require repairs in many places. Surely something might be done to remedy this sad state of things. If a church rate cannot be procured, the voluntary system might be found efficacious in removing the scandal. The church contains some interesting portions: the tower and spire, piers, arches, and some portions of the walls are Early English; other portions are Decorated, with fine tracery in some of the windows; and there are three stalls, a holy water drain, and aumbry in the chancel. The font is

plain, but has good moulded shafts. What a reflection is the present state of the church upon its custodians."

Liverpool.—New Free Church.—The foundation-stone of a new Free Church, to be erected in Gore-street North, was laid last week. This church, when completed, will consist of chancel and nave 90 feet long by 30 feet wide, organ chamber 20 feet by 20 feet, and south aisle 70 feet by 20 feet, with wooden belfee over the arch which divides the two latter. As the ground falls towards the west end, a class-room, 28 feet by 20 feet, is obtained under that part of the aisle. It is only proposed to erect the south aisle at present as a mission chapel; the organ chamber will, therefore, in the meanwhile serve as a chancel. The aisle is divided into five bays by buttresses and two-light windows on the south side, and the chancel into two bays, the north side being left blank for future enlargement in that direction. The height of the interior to the ridge is about 40 feet, and to the top of the wall 21 feet. The building is to be erected of brick, with stone dressings, and all the timber work to be of fir, stained and varnished. Middle-Pointed Gothic is the style adopted. On the south side, and one bay from the west end, is the entrance door. There are to be no benches or fixed pews, but the whole space is to be free and unincumbered, floored with red and blue tiles, and provided with chairs which can be set or removed at pleasure. The table, with the communion-railing, the pulpit, the reading-desk, and font, are not included in the contract, they will form gifts to the church from those who are charitably disposed. The present portion of the building is to cost £1,500. Mr. Tomkinson is the builder, and Messrs. W. and J. Hay are the architects.

SCHOOLS.

Stourbridge.—The grammar school premises have been rebuilt, with a frontage to High-street, of 101 feet. The style adopted for the buildings is the Perpendicular, from a design by Mr. T. Smith, of Stourbridge, architect. The main entrance is under a tower 60 feet high, which is approached from the street by a broad flight of stone steps. The residences are approached from the street by a terrace, which has an ornamental pierced wall and iron gates. The end of the school towards the street is semi-octagonal, buttressed at the angles. The three faces have windows with tracery in the heads. The roof is of high pitch, and covered with black and red tiles in bands. The school is a parallelogram of 52 feet by 22 feet 6 inches. It is 30 feet in height. Internally the roof is supported by hammer-beam principals resting on stone corbels. The ceiling is ribbed and carved at the intersections. Light is obtained from the three windows at the street end before mentioned, which form internally one large bay, and at the opposite end by a lofty four-light traceried window, recessed into a deep square bay. A lecture hall, 39 feet by 17 feet, is entered by an archway and lobby at this end of the school. The tower is surmounted by a cupola, forming a chamber for a clock and three bells. An angle turret is projected at the school floor level in the master's lobby, upon carved corbels, and by a spiral stair access to the roof, gutters, and clock chamber, is obtained. The entrances have arched doorways, and all the windows have cusped and labelled heads. The parapets are crenellated and broken by gables of high pitch. Owing to the want of funds much of the carving has been left in block, except the arms of the royal founder. The crocketed finials, the rose, portuculis, fleur-de-lis, crown and badges, and the corbels and drip-stones, and tower, have been executed. The playground is entered from the school lobby, and is fitted with a gymnasium. The cost of the work as carried out, including purchase of additional frontage, is about £3,050. The builder is Mr. Nelson, of Dudley.

NOTES FROM THE PROVINCES.

Clifton Suspension Bridge.—Messrs. Hawkshaw and Barlow, the engineers for this work, have reported that a contract has been entered into with Messrs. Cochrane and Co. for taking down the chains of the Hungerford-bridge and re-erecting them at Clifton, and for the supply and erection of the whole of the additional ironwork, and other work necessary for the construction of the Clifton-bridge, and the suspended portion of the roadway. The time at which the chains will come into possession of the Clifton Bridge Company depends upon the rapidity with which the construction of the new bridge at Hungerford advances. Judging from the progress already made in that work, they recommend that the preliminary operation of preparing the anchorage and piers at Clifton for the reception of the chains should be commenced at Midsummer of the present year. The examination and re-arrangement of the links of the chains, and the construction of the new links and other ironwork, will proceed simultaneously with the preliminary operations at Clifton.

Colchester Camp.—The formation of the artesian well in connection with the new camp at Colchester is now being pushed forward, the borings having reached a depth of nearly 200 feet. The contractors for the new cavalry barracks have not yet commenced the works, and it is said an extension of one month has been given them in consequence of the still heavy works to be completed upon the building for the Great International Exhibition.

Ross.—A new building has been erected in this town for a corn, cheese, butter, and poultry market. The cost has been £2,500, which was raised in shares. In addition to the accommodation for agriculturists, there are also rooms for the library of the Mechanics' Institute, reading-rooms, &c.

Residence of the Bishop of Gloucester and Bristol.—Efforts are being made to complete the Episcopal Palace for the Bishop by the Triennial Festival, which will be held in Gloucester in August or September next. Several old houses have and are being pulled down to improve the aspect and increase the garden. The new building occupies the site of the old Palace. The only portion spared being part of the great hall in the centre of the building. The cellarage under it being substantial and spacious, it was determined not to remove it; and it was intended that the walls and the roof should be retained, until it was ascertained that they were much dilapidated, and they have therefore been taken down and rebuilt. The building is 180 feet long by 60 feet wide, and forms two wings, one eastward and the other westward of the Abbot's-hall, communication being made through the great hall with the two wings. The east wing is intended for the Bishop's residence, and the west wing for the episcopal business. The latter contains the library and waiting-room, and over them several bed-rooms, &c.

Leighton Buzzard.—At a meeting of the directors it was resolved that the contract for building the new Corn Exchange should be given to Messrs. Osborne Brothers, of Leicester, and that they be requested to commence the same without further delay. Those present were of opinion that a stone front would be far more substantial and preferable to one covered with cement; they

therefore came to the resolution to have a stone one, as provided in the original specification; and to meet the additional expense two of the directors subscribed £50 each.

Budleigh Salterton, near Exeter.—A public assembly-room has been opened at this place. The principal room is 50 feet long by 28 feet wide, and 18 feet high. There are committee-rooms attached, together with a residence for a person to look after the premises. The building is in the Italian style, with cement dressings. The ceiling is panelled, with ornamental ironwork, acting as ventilators. It will accommodate about 500 persons. The architect is Mr. W. T. Cross, of Exeter. R. Burch, of Budleigh Salterton, was the contractor.

Melrose.—It is proposed to erect a corn-exchange here, which will be suitable for lectures, concerts, sales, &c., for which there has hitherto been no proper accommodation. A site in the market-place is thought most suitable. The total cost is estimated at £2,000.

Bath.—A report, to be submitted to the Town Council at its next meeting, has been published, embracing the suggestions of the Market and Borough Property Committee, for improving the Bath Market and the approaches thereto, according to the plans prepared by Messrs. Hicks and Isaacs, architects. The summary of the whole expenditure involved in the erection of the works is estimated as follows:—The market improvement, £6,120; new entrance from Bridge-street, &c., £1,600; new slaughter-houses, £1,400; the purchase of Bruce's premises, £180; total, £9,300. The committee, in conclusion, state that, assuming the total as not exceeding £10,000, they would suggest that £1,000 of that amount should be charged as an extraordinary expense against the borough fund for the year beginning September 1st, 1862. For the remaining £9,000, supposing it to be raised by mortgage or bond, they have good reason for believing that the annual surplus hereafter accruing from the water rents will reach a sum of £800 per annum, which would be more than adequate to provide for the interest of the money borrowed, and repayment of the capital by annual instalments, without any addition to existing rates on the burgesses.

Deal.—The Admiralty have given their assent to the construction of a pier at this place on iron piles, stretching 920 feet out to sea, with a general width of 20 feet, and, at the head, of 40 feet; height of platform above high-water mark, 13 feet, and an average depth at the head of the pier at low-water spring tides of 10 feet, so as to insure landing and embarking at all times of tide.

Wilson Monument, Paisley.—A monument is about to be erected at Paisley to the memory of Alexander Wilson, "Paisley poet and American ornithologist." The design has been selected in competition, and is by Mr. J. Mossman, of Glasgow. A figure of the Ornithologist stands beside the trunk of a tree, his rifle beside him, and his sketch-book on the ground. He has just shot a bird, and holding the specimen in his hand, he regards it with observant and contemplative look. The figure is to be of bronze, 7 feet 6 inches in height, standing on a massive pedestal of Aberdeen granite, 9 feet 6 inches high—the united height of pedestal and statue being thus 17 feet. The subscriptions on hand amount to nearly £500, and about £100 more will be required to complete the work.

Morgan Hospital.—This new hospital, says the *Dundee Courier*, which is to be placed on a triangular-shaped park at the junction of the Pitkerro and Forfar Roads, is in the Scotch Baronial style of the sixteenth century, and with various French features introduced, consists of four façades, enclosing an oblong court, 125 feet by 50 feet. The principal entrance front is 183 feet long. In the centre of this front is a lofty square tower, slightly projecting beyond the line of the rest of the front, and containing the chief entrance to the building. The tower is 20 feet broad at the base, and terminates at a height of 90 feet, in a steep slated roof, finished with an ornamental iron ridge. At each of the four corners of the tower, and 40 feet from the ground, is a boldly corbelled out circular turret, carried up some feet above the tower, and capped by a steep slated roof, terminating in a pinnacle, at nearly the same height as the roof of the tower. The tower is flanked on each side by a large bay-window, on corbels at the level of the first floor, and rising up into a gable, with crows steps. At each end of this elevation is a crows-stepped gable, projecting 11 feet beyond the main line of front. These gables have on their angles ornamental shafts, with carved bases and capital. In the centre of each gable is a corbel, from which springs a shaft with base and carved capital, supporting a chimney stack on the apex of the gable, and on each side of this corbel shaft there is, in the first-floor, a large window, in the head of which is carved tracery. Between these gables and the tower on each side is a large mullioned and transomed window. This and the two flank elevations are two stories in height, with a steep roof, with ornamental ridge. The flank elevations, which are 120 feet long, correspond in style with that already described, but are varied in design. The portion of the east elevation, devoted to the chapel is of ecclesiastical character. Entering the building by the principal door in the tower there is an entrance hall 20 by 16 feet, at the further end of which is a large oriel window looking into the inner court. On each side of this oriel runs the main corridor of communication, 8 feet wide, and lighted by windows looking into the court. At the end of the corridor, on the stairs to the upper floor, on the right-hand side of the entrance hall, are three class-rooms, 30 by 22 feet; boys' dining hall, 45 by 24 feet; master's and matron's dining-room; master's private-room; lavatory, &c. And on the left side of the entrance hall are the trustees' room, 25 by 21 feet; clerk's room and safe; library for the boys; two rooms for the matrons; and two stores for keeping boys' clothes. Communicating with this end of the corridor, but also provided with a separate entrance from the grounds, is the master's house, of seven rooms, besides kitchen and servants' accommodation. The kitchen offices of the hospital occupy the fourth side of the square, and are connected with the main part of the building by a covered passage running round three sides of the court. The accommodation provided in them on the ground floor consists of a kitchen, 25 by 21 feet, scullery, pantries, laundry store, washing-house, and drying closet; and in a sunk cellar a depot for coals. In a second story, above the back entrance, are a laundry and two large bed-rooms for servants. The upper floor of the principal building is occupied by large dormitories, with windows on both sides; and there are also two dormitories on the east side of the building. The total superficial area of the dormitories is 4,266 feet. Above the dining hall is the chapel, and at the south-west corner of the building, and shut off from the rest of the hospital, is an infirmary of two rooms, with bath, &c., scullery, and nurses' room; lavatories and baths are also provided on this floor.

Cavalry Depot, Maidstone.—"We are sorry to hear," says the *Maidstone Journal*, "that orders have been received postponing the rebuilding and enlargement of this garrison for the present. This step has doubtless been taken from the pressure upon the finances of the country."

TENDERS.

FARM-HOUSE, CHANTRY.

For a small farm-house at Chantry, on the Stagshaw estate, belonging to Robert Haythorn, Esq. J. E. Watson, architect, Newcastle-upon-Tyne. Quantities not supplied.

Dodd and Herdman.....	£252 0 0	Forster and Hogarth	£242 0 0
Thompson	246 0 0	Sartorius and Fairless.....	244 6 0
Snowball	245 11 0	C. and G. Dixon for portions of	
Green	244 16 0	work.....	104 15 0

LUNATIC ASYLUM, KENT.

For lunatic asylum at Stone, Kent, for the Corporation of the City of London. February 28th, 1862.

	In Portland Stone.	In Ancaster Stone.
Webster	£45,500	£43,400
Holland and Hannen	44,600	43,000
Ryder	44,200	42,800
Higgs	43,445	42,000
Sewell and Son	43,196	40,106
Trollope	42,800	41,920
Brown and Robinson	42,670	40,820
Condor	42,600	40,400
Lucas Brothers	42,300	41,550
Hill and Co.	41,000	39,038
Myers	40,817	40,150
Axford and Co.	40,140	39,660
Ashby and Horner	39,970	39,500
Perry	39,575	37,575
Wilson	39,425	38,925
Piper and Wheeler	38,464	37,784
Cubitt and Co., declined	—	—
Mansfield and Sons, declined	—	—

CHURCH, SCOTLAND.

For the erection of the free church of Kirkmichael.

	Wrights or Joiner's Work.		Mason's Work.
Robert Harris.....	£285 0 0	David Richardson.....	£218 0 0
James Johnston.....	259 0 0	Jardine Brothers	210 0 0
Tod and Pagan	238 10 8	Joseph Thompson & Co. (accepted)	209 0 0
Joseph Robson	£190	Joseph Davidson.....	£137
John Lawder	177	Samuel Gracie (accepted).....	126
William Dickson	£32 10	Plasterer's Work.	
John Bridges	£43 10	E. and L. Laidlaw (accepted)	£21 10
Archibald Hutchieson.....	35 0	Slater's Work.	
		Thomas Bridges (accepted).....	£31 10

MANSION, IRELAND.

For additions and alterations to Leskanore House, near Omagh. Messrs. Boyd and Batt, architects, Belfast and Londonderry. Quantities taken out by Mr. Fetherston Londonderry.

Mullin, Omagh	£2,550 0 0	McGaughey, Omagh.....	£2,100 0 0
Ferguson, Londonderry	2,332 0 0	McClelland (accepted).....	2,074 10 5
Steward, Belfast	2,181 0 0		

PUBLIC-HOUSE, HOUGHTON.

For erecting a public-house, at Houghton. Mr. Robert Hutchinson, Huntingdon, architect.

C. R. Maile.....	£279 0 0	P. Brown.....	£255 0 0
W. Cannell	269 0 0	G. Richardson	244 0 0
W. Balmer	268 0 0	C. Mason (accepted).....	242 17 6
J. Saint	263 0 0		

SCHOOLS, BANWELL.

For erecting Banwell National Schools. Mr. Hans F. Price, architect, Weston-super-Mare.

Jesse Thorney	£325 0	John Palmer	£255 0
Wm. Brock	320 0	R. H. Trickey	253 15
Samuel Lancy	280 0	Wm. Howlett (accepted).....	237 7

WAREHOUSES, WHITECHAPEL.

For the erection of No. 4 warehouses, Commercial-street, Whitechapel, for M. Levy, Esq. Mr. H. H. Collins, architect. Quantities supplied.

l'Anson	£6,940	Piper and Wheeler	£6,476
Lawrence and Son	6,880	Myers and Son.....	6,486
Ashby and Son	6,690	Macey	6,339
Newman and Mann	6,668	D. King (accepted).....	6,326
Ashby and Horner	6,575		

CATTLE MARKET, COLCHESTER.

For draining the ground, constructing oak pens for sheep and pigs, and stands for oxen, paving the pens with hard bricks, and the roadways with Kentish rag, and gravelling the remainder of the surface. Plans by Mr. J. Cooke, C.E.

J. Sawyer	£1,933 0	Lee and Baker	£1,406 10
C. Parker	1,800 0	G. Dobson	1,357 16
Rayner and Runnacles	1,521 10	B. Orrin	1,348 10
S. Start	1,513 0	H. Strikson	1,160 0
R. Hawkins	1,444 0	J. Ham (accepted).....	1,149 0

The Surveyor's estimate was slightly over £1,200.

ALTERATIONS, CORNHILL.

For Alterations at No. 75, Cornhill, for the Metropolitan and Provincial Bank. Francis H. Fowler, Esq., architect, 32, Fleet-street. Quantities by Mr. Harris.

Axford and Co.	£1,797	George and Son (accepted).....	£1,630
Rider	1,780		

COMPETITIONS OPEN.

BRIDGES.

BRISBANE RIVER.—The Municipality of Brisbane are prepared to receive designs and tenders for the construction of a bridge over the Brisbane river, at Brisbane, the capital of Queensland. The author of the best design, at the lowest cost, will receive a reward of £150, or be employed to carry the work out, providing he furnishes sufficient proof of his competency and experience in similar undertakings. A premium of £50 will be awarded to the next best design, and £10 for the next best. The plans, specifications, and estimates of the first and second designs will be retained by the Corporation as their property. The remainder will be returned to the competitors; but the corporation will incur no responsibility as to their safe delivery. Each set of drawings, and the documents accompanying them, are to be distinguished by a motto only, and accompanied by a letter in a sealed envelope, marked with the same motto, and containing the author's name and address, and such testimonials as he may think proper to furnish. Professional judges, being non-competitors, will be appointed by the Corporation to determine the merits of the respective designs. Eligible tenders for the work, accompanying the design, will be entertained. All drawings and tenders to be delivered at Gresham House, on or before the 15th of March next. Copies of the instructions to competitors, and the

plan of the city, can be obtained of F. Mangles and Co., the Colonial agents, and agents to the Municipality of Queensland, 88 to 88, Gresham House, Old Broad-street, London, E.C.

DUBLIN.—The committee appointed to carry out the new Carlisle bridge (Dublin) scheme, require plans and specifications for the erection of the structure on the present site, the full breadth of Sackville-street. £200 will be paid for the best and most approved plan, £100 for the second, and £50 for the third. The plans, &c., to be the property of the committee, to whom applications are to be made at the Imperial Hotel, Sackville-street, Dublin.

INFIRMARY.

LONDON.—The managers of the Central London District School desire to have designs for a detached infirmary for their boys' and girls' schools at Cuckoo Farm, Hanwell. The building must be of a simple and inexpensive character, in harmony with the existing buildings, and comprise accommodation as required by the Poor Law Board for 180 boys and 180 girls, each sex to be separately distributed in six rooms. There must also be a kitchen, surgery, waiting-room, and other necessary offices underneath. Particulars on application to the superintendent at the schools. The plans must be drawn to an uniform scale of 8 feet to an inch, each to be accompanied by a specification of the works and an estimate of their cost. No premium will be given, but the architect whose plan is chosen will be paid by commission for supervision, &c., of erection of the building in the usual way. Each set of plans must be subscribed with a motto, and forwarded with a sealed letter, containing the motto and the author's name, to Samuel Heath, Jun. clerk to the Board, No. 10, Basinghall-street, E.C., on or before April 2.

LAYING OUT.

TRANMERE.—The directors of the Tranmere Freehold Land Society desire plans, before the 25th March, for laying out and allotting the estate belonging to the Society, in Higher Tranmere; consisting of about 40 statute acres. Premiums will be given for the best and second-best plans. Each plan to be accompanied with an estimate of the cost of the formation and construction of the roads and sewers, and also of the laying out of the land. Particulars from Mr. John Quinn, Chairman of the Society, 22, Lord-street, Liverpool; or from Mr. H. P. Priest, Secretary, Market-cross-chambers, 19, Market-street, Birkenhead.

CONTRACTS OPEN.

MECHANIC'S INSTITUTE.

DUDLEY.—For the erection of a new mechanic's institute and public hall, at Wolverhampton-street, Dudley, in the county of Worcester. Plans, &c., at the office of Mr. William Bourne, architect, Tower-street, Dudley, to the 17th March. Sealed tenders, endorsed, "Tenders for Mechanic's Institute at Dudley," are to be forwarded to Joseph Stokes, solicitor, Wolverhampton-street, Dudley, Honorary Secretary, on or before the March 20.

MANSION.

SOUTHAMPTON.—For the erection of a mansion, &c. Particulars with Guillaume, Parmentier, and Guillaume, architects, &c., Southampton.

INFIRMARY.

LYMINGTON.—For the erection of a fever ward upon part of the workhouse premises in Lymington. A plan of the work, with specifications, at the office of Messrs. Colborne and Son, surveyors, Lymington. Sealed tenders to the Clerk to the Guardians at his office in Lymington on or before March 22.

PIER.

BLACKPOOL.—For the erection of an iron landing and promenade pier, for the Blackpool Pier Company, (Limited.) Plans, &c., on Monday the 3rd March next, at the office of Messrs. Birch, the engineers to the company, 43, Parliament-street, London, S.W., or at the Company's office, Blackpool; and bills of quantities will be furnished on payment of ten shillings. Sealed tenders by the 10th March next, addressed to the chairman of the Blackpool Pier Company, Blackpool.

CHURCHES.

BIDEFORD.—For rebuilding Bideford Church. Plans, &c., on application to the rector, till the 2nd March. Sealed tenders addressed to the secretary, on or before March 10th.

PRESTON.—For the erection of the whole or any portion of a new church, to be built at Preston. Plans, &c., at the Upper School-room, Wellfield-road, Preston, and also at the office of the architect, Mr. E. G. Paley, Lancaster, to 18th March, inclusive. Tenders to be sent in under cover to Rev. Thomas Clark, West Cliff-terrace, Preston, endorsed "Tender for St. Mark's Church," on or before March 22.

CHAPEL.

BRISTOL.—For the erection of the Clifton Wesleyan Chapel. Drawings, &c., with Fosters and Wood, architects, 6, Park-street, Bristol, till the 28th inst., on or before which the tenders are to be sent to the architects, sealed and endorsed "Tenders for Clifton Wesleyan Chapel."

VICARAGE.

MONMOUTHSHIRE.—For the erection of Caerleon Vicarage-house, three miles from Newport, Monmouthshire. Plans, &c., at the King's Head Hotel, Newport; and tenders may be sent to Richmond and Seddon, diocesan architect, 6, Whitehall, London, on or before the 15th of March.

SCHOOLS.

ESSEX.—For the erection of new school buildings at Great Holland, Essex. Plans, &c., at the office of Mr. H. W. Hayward, Bank-buildings, Colchester, the architect. Tenders to be sent to the Rev. R. Joyes, Great Holland Rectory, near Colchester, on or before the 11th March.

DWELLING HOUSES.

SOUTHAMPTON.—For the rebuilding of the house and premises, No. 9, Middle East-street, Southampton. Plans, &c., at the office of Mr. E. T. Howell, surveyor, Hanover-buildings, Southampton.

POLICE-STATION.

DEVON.—For the erection of police station, &c., at Northtawton, Devon. Plans, &c., with Henry Ford, Clerk of the Peace, Castle of Exeter, and at the office of Robert Fulford, Esq., clerk to the Justices, Northtawton. Sealed tenders endorsed, "Tender for Northtawton Police Station," to be sent to Mr. Ford on or before the 1st April.

MILITARY WORKS.

SCOTLAND.—For contracting from 1st April, 1862, to 31st March, 1865, inclusive, for the performance of such artificers' work as may be required at the under-mentioned stations, viz.:—Edinburgh Castle; Piershill Barracks; Leith Fort, Martello Tower, and Blackness Castle; Greenlaw Military Prison and Barracks; Perth Barracks; Dundee Barracks and Broughty Castle; Dunbar Barracks; Berwick and Holy Island; Glasgow Barracks; Dumfries Castle; Paisley Barracks; Hamilton Barracks; Ayr Barracks; Fort Matilda; Stirling Castle; Aberdeen Barracks; Beach and Torry Point Batteries; Forts George, Augustus, and William. In all cases, the seven trades are to be in one tender for each station, and the contracts to be determinable at any period after the first year, on either party giving to the other three months' notice in writing. Any person may tender for one or more of the above stations. Parties applying for forms of tender must give sufficient guarantee to the entire satisfaction of the commanding royal engineer of their being fully competent to undertake and execute any new works or repairs that may from time to time be ordered on the contract schedules. Every information on application to the Royal Engineer or Barrack officer, at the several stations herein named, together with printed schedules of the prices, with the terms of contract and letter of tender for the several descriptions of artificers' work, to the 27th February, upon making a deposit of five shillings for the same. The letter of tender to be sealed, and transmitted under cover to the Director of Contracts, War Department, Pall-mall, London, S.W., so that it may be received on or before the 10th March, 1862, and to be marked on the left-hand corner of the envelope, "Tender for Works at _____."

GUERNSEY, &c.—For the usual triennial contracts for works and repairs to War Department Buildings in the Islands of Guernsey and Alderney. Schedules of prices and forms of tender (for which ss. 3d. for each set will have to be deposited), and all other information may be had on application to the surveyor, at the office of the Inspector-General of Fortifications, War-office, Pall-mall, London, S.W.; and at the Royal Engineer-offices in

Guernsey and Alderney. Tenders will be received by the "Director of Contracts," War-office, Pall-mall, London, S.W., on or before the 20th March.

DUBLIN.—For the performance of such artificers' work as may be required at the under-mentioned stations, from the 14th April, 1862, to 31st March, 1864, inclusive, viz.:—Dublin District, as per schedule B, Athlone, with 5 per cent. in addition for rifle range; Mullingar, with 8 per cent. in addition for rifle range. The contracts to be determinable at any period after the first year, on either party then giving to the other three months' notice in writing. Information to be had at the District Royal Engineers' Office, Dublin, and at the Royal Engineers' Office, Athlone, or to the Barrack Master at Mullingar; and printed schedules of prices, with terms of contract and letter of tender, may be had on depositing 10s. Tenders sealed to be transmitted under cover to "The Director of Contracts, War Office, Pall-mall, London, S.W.," marked on the outside "Tender for Work at Athlone or Mullingar" (as the case may be), before March 15th.

ROADMAKING, &c.

IRELAND.—For the following works, in the barony of Gorey, in the county of Wexford:—1.—For making a new line of road from the corner of the Post-office in Gorey, to Edward Foley's cottage in Ballyrabeen, containing about 415 perches; not to exceed £500. 2.—For making a new line of road from Gorey to Tinahely, containing about 300 perches, in the townland of Ballingarry. Plans, forms of tender, &c., obtained, at the office of Henry E. Wynne, secretary to the Grand Jury, County Court House, Wexford.

PAVING, &c.

NEWINGTON.—For the supply and doing of such paving and curbing to the extent, as to paving, of about 60,000 feet super; and, as to curbing, to the extent of about 14,000 feet lineal; and also for the supply of such broken granite (Guernsey, Bombay, and Port Phillip), flints, Kentish rag, gravel, and smith's work, as the vestry of St. Mary, Newington, Surrey, may require of the contractor, from the 25th March next until the 25th March, 1863. Particulars, &c., with H. and F. Chester, joint clerks to the Vestry, 1, Church-row, Newington-butts, to whom tenders must be sent before 6 p.m. on the 10th March, and the several persons willing to contract must attend the Committee at 7 o'clock on the same evening.

SEWERAGE, &c.

DUMFRIES.—For constructing and completing a main sewer and its appurtenances, in the White Sands, Dumfries. The sewer will be about 500 yards in length, and to be built of bricks with fire clay invert blocks. The section, &c., with James Barbour, C.E., Buccleuch-street, Dumfries; and tenders to be lodged with William Martin, town clerk, on or before 20th March.

SUPPLY.

HACKNEY.—For the supply and execution of the undermentioned works and materials for the Board of Works for the Hackney District. Cartage for the period of three years, from the 25th of March next, for the parishes of Hackney and Stoke Newington, for the cartage of materials, slop, rubbish, and road grit, &c. Materials, &c., for the period of one year, from the 25th day of March next, for the parishes of Hackney and Stoke Newington. For the supply of glazed stoneware sewer and drain pipes. For the supply and delivery of ballast, shingle and hoggins; for the supply and laying down of York paving, and granite curbing; also for repairs to the existing footways; for the supply and fixing of lanterns, lamp-heads, stand-pipes, and service-pipes; removing, altering, and fixing lamp-posts; for the supply of cast-iron covering plates, flushing-hoses, and gully-grates, &c., for sewers work; for watering Newington ward; De Beauvoir Town ward; Dalston ward (part of); South Hackney ward (part of); Shacklewell (part of). Forms of tender and further particulars at the office of Mr. James Lovegrove, C.E., surveyor to the Board; Town-hall, Hackney, between nine and eleven o'clock, a.m. Tenders to be sealed, endorsed, and addressed to Richard Ellis, clerk, and delivered at the Town-hall, Hackney, on or before the 12th of March. The parties tendering, or their representatives, must attend at the Board on the 13th, at eleven o'clock precisely.

CHELSEA THOROUGHFARES.—A great improvement in our public thoroughfares has just been completed in King's-road, Chelsea. The dead wall which hid the Duke of York's Asylum for boys, has been pulled down and set farther back, thus providing a pathway which has been long required. The new pavement is six hundred feet long by seven feet six, and was entrusted by the vestry of Chelsea to Mr. William Byram, stone merchant, of Druce's Wharf, Chelsea. Mr. Byram, desirous of setting a good example to employers and employed, has invited the masons and men to a good old English repast, to commemorate the completion of an improvement so long demanded. By the way, Chelsea is, perhaps, the only metropolitan parish that is taking active measures to improve the public thoroughfares for the traffic which may be expected this year.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

A GRAINER (Oswestry).—Write to the Secretaries, 9, Little Trinity-lane, City.

THEODORE.—Will doubtless find the information required given elsewhere.

H. J.—Received.

D. W.—If cottages are meant, Vincent's work is a good one.

G. S. (Leicester).—Opinions differ; perhaps a warm neutral is the best colour.

A. A. B. (Dabriscan).—Thanks for tracing.

T. S. (Sheffield).—Much obliged.

G. E. T.—We cannot recommend societies.

SUBSCRIBER.—Shall be attended to.

J. T.—Too late.

Z. A.—Ditto.

S. E. D.—Drawing shall be engraved.

J. C.—Deferred for want of space.

H. B. C.—Below our mark.

BRISTOLIAN.—We do not like to interfere on ex parte statements.

J. O. F.—Shall appear.

F. W. (Ipswich).—A very wide question; and, unless we know more definitely what is

T. X. G. R. A. F.—Send name and address.

L. F. E. Z.—Shall hear from us.

JOURNEYMAN MASON.—Hint shall be kept in mind.

F. B. R.—We cannot find address.

THAMES EMBANKMENT.—Perhaps.

D. W. B.—Declined with thanks.

G. E.—Send plan; view shall be engraved.

T. E. R.—Next week.

K.—Refer a statement of facts to the head of the department.

ROYAL ENGINEERS.—We cannot help it; can R.E. point out where we are wrong?

D. I.—Who writes under several signatures, must not hope so to impose on our credulity. If the matter had deserved attention it would have received it.

B. F.—Let us see rough sketch.

F. E. Z.—Ditto.

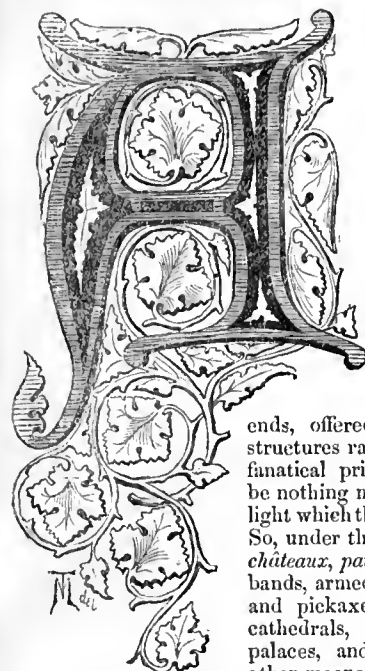
NOTICE.

The Seventh Volume of the BUILDING NEWS is now ready, bound in cloth, price 21s. Subscribers can have their copies bound, either with or without the advertisement pages, for 4s. 6d., on sending them to the office. Cases ready for binding the volume may be had price 2s. each.

* All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old Boswell-court, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 15 to 21, Old Boswell-court.

Advertisements are received up to six o'clock on Thursdays.

THE DESTRUCTION OF CITY CHURCHES.



BMID the bloodiest and darkest days of the first French Revolution there was formed a band—*la bande noire*—of speculative individuals, who assumed the utilitarian mission of converting into money, or to some purpose of practical utility, the architectural monuments which the piety or refined taste of their ancestors had raised to the great embellishment of France. The Convention wanted money to equip armies as apostles to the rest of Europe of the Religion of Reason, and as pioneers of French civilisation; and the Black Band, in their patriotic anxiety to further these

ends, offered their money in exchange for structures raised by a haughty aristocracy and fanatical priesthood—structures which could be nothing more than obstructions to the new light which the *Etre Suprême* shed over France. So, under their black flag, inscribed *guerre aux châteaux, paix aux hameaux*, they went forth in bands, armed with sledge-hammers, crowbars, and pickaxes, and levelled to the ground cathedrals, churches, monastic structures, palaces, and mansions, where there were no other means of making money than from the

sale of old building materials. In districts where individuals offered to purchase from *la bande noire* confiscated edifices for conversion to useful purposes, care was taken to destroy statues, carved armorial bearings, and artistic ornaments, in order to efface traces of the inequality and superstition which previously existed. From the northern provinces, dotted with Flemish and the best French interpretations of Gothic art; through Normandy, with its stately feudal castles and masculine styles, uniting force and grace into forms of beauty; through the valley of the Loire, where the pleasing works of the Renaissance stand on noble terraces sweeping down to the river; on to Limoges, where two styles of art may be said to have met; on their way northward, from the Lombard and Venetian cities of Italy, and from the Moorish towns of Spain, the destroyers passed, leaving a broad tract of senseless, purposeless, and irreparable desolation behind them.

The Convention—ignorantly indifferent as the members were to the opinions of posterity, and careless of everything that did not gratify their political passions—did not venture directly on works of destruction, although clearly responsible for the vandalism of *la bande noire*. In justice we should, perhaps, make a distinction between the Convention and the government of the Convention. If the Executive sold architectural works to ruthless destruction, the Convention, or some of its members, strove to preserve the artistic inheritance bequeathed by the past. An ex-bishop of Blois, a Conventionist, indignant at the degradations and destructions—for which he invented the term vandalism—perpetrated in the provinces, made several reports, and at last obtained decrees rendering the constituted authorities responsible for the preservation of national monuments and libraries. Of the buildings the Convention decreed national property and took possession of in the name of the nation, it did not openly proceed to destroy any, but converted them to some *quasi* useful purpose. In Paris the Archbishop's Palace was united to the well-known hospital, Hotel Dieu, and the conventual structures were most of them transformed into hospitals. Such was the destination of the Abbey St. Antoine, of the Benedictine Convent Rue de Sèvres, of the Monastery Panbourg St. Jacques, of the Convent at Chaillot, the College Montaigu, the Convent of Val de Grace, and others. A Jacobin convent was transformed into an artillery museum. The Abbey of St. Martin was made the Conservatory of Arts and Trades, and the church is now a library. We scarcely remember an instance of the Convention pulling down a church, though it may have desecrated many. And it is, therefore, all the more surprising that what the Convention dared not do when its political and irreligious madness was at its height should be proposed to be done in London, under the patronage of the Bishop, and when we are at the full flood of a religious revival.

A statement has been going the round of the press that the Post-office authorities have offered a sum, varying from £40,000 to £80,000, for the site of the church of St. Mary Woolnoth, to construct the Lombard-street branch thereon. This structure will, therefore, if the parishioners consent thereto, be forthwith demolished, and will be the first church

taken down under the Bishop of London's new Act, the 22nd article of which provides that the proceeds of the "first sale of property or materials" shall be appropriated for the payment of expenses incurred, retrospectively or prospectively, in carrying out the provisions of the Act; "And the same fund shall from time to time be augmented by the Ecclesiastical Commissioners from the produce of similar sales of property as there may be occasion." The written consent of the Vestry is necessary before the scheme can be carried into effect.

Sentiment is, doubtless, excessively foolish; but there are few Englishmen—excepting, of course, Bishops and Ecclesiastical Commissioners—who can contemplate with indifference the destruction of an edifice consecrated to the worship of God, and wherein our fathers were baptised, married, and solemnly dismissed to the grave through generations of men. The desecration of the graveyard—God's acre, as our fathers simply and reverently called it—is still more revolting to the laity. No consideration should be allowed to disturb the ashes of the dead.

Although this may be a matter of sentiment with Englishmen, and they may feel that they would suffer almost any personal inconvenience rather than pull down a church or disturb graves, it may be admitted that there are cases in which such proceedings may be tolerated—we cannot say justified. But every case must be judged by itself and *not en bloc*. Is there an excuse or necessity for the destruction of St. Mary Woolnoth? The excuse for the Bishop of London's Bill is, that in the city there are many churches without congregations, while, without the city, there are many congregations without churches. The city churches have rich endowments, and their sites are valuable; appropriate the endowments and prices of the sites of such churches as are unattended to the erection and endowment of new churches in the suburbs, says Dr. Tait. Certainly, the scheme looks very utilitarian—quite philosophical at first glance—but subsequent examination will show it to be the reverse. The first proposition of the advocates of the measure is that London contains nearly three million inhabitants and less than 500 churches, so 100 churches should be built. In this we may concur; by all means let us have the additional century of churches; but not old churches pulled down to build up new ones, for that would not alter the relative proportions of population and churches. Then, we are not sure that the figures represent the actual accommodation for religious worship. Turning to the last edition of the *Post Office Directory*, we find there enumerated 334 Established churches and 77 chapels of ease, 104 Wesleyan chapels, 100 Independent chapels, 89 Baptist chapels, 84 chapels of other Protestant Dissenters, making the total of Protestant places of worship 782. To these must be added 31 Catholic chapels, 10 synagogues, 8 Quaker meeting-houses, 7 Unitarian chapels, and 2 Greek chapels, giving the grand total of places of worship at 840 for a population of 2,803,534, as ascertained by the last Census, instead of the figures stated by the advocates of church destruction and extension. The figures as given corrected may not show that ample accommodation for public worship is provided in the metropolis, but they do prove that it is not so deficient as has been represented, for they show one place of worship for every group of population equal to 3,300 souls, instead of one for 6,000.

The history of church extension in the metropolis is well worth glancing at on the present occasion. When FitzStephen wrote, there were in London and the suburbs 13 conventual churches, and 126 lesser parish churches. Centuries later, when Stow compiled his "Survey," the number he gave for total was the same, 139; of these 89 were destroyed by the Fire, and of them 35 were not rebuilt. This would leave 104, independently of the two cathedrals, at the close of Wren's labours. From 1680 to 1850 there were built, independently of those erected by the present Commissioners, 56 churches for new parishes and districts; and the present Commissioners erected, wholly or partially, 90 new churches up to 1850. Since then greater progress has been made, so that there is no room for charging the present generation with having neglected its duty in this matter.

Granted that the population has departed from the City churches, and that new churches are required in recently-formed districts, it does not follow that we should destroy what may now be unused. Before doing so—before resorting to so extreme a measure, we are bound to exhaust every other resource. The fabric of a church is not the property of a generation. We have only a life interest in it, and hold it in trust for those who may come after us. In common justice we cannot alienate it, unless it be in the interest of our successors. Were the number of churches within the City to be reduced to suffice the present resident population, there is no certainty the diminished amount of church accommodation will be adequate to supply the wants of the future resident population. There is just now a tendency to live out of the City; but, so far as the poor are concerned, that is because they are expelled. It is quite possible that a change may take place in the style of building, and that, as London grows larger, architects will give a vertical direction to the growth of London; that is to say, erect lofty houses of six or more stories. Should this occur—and there are not wanting premonitory symptoms of this change—

nothing is more likely than that the resident population will augment. There will then be no church accommodation for them, and it will be impossible to provide it, except at very disproportionate cost. Under these circumstances, the destruction of City churches now will be an act of cruel injustice, of culpable indifference, having regard to the contingent requirements of the future. It is the duty of centres of population, where church accommodation is required, to provide it out of their own resources. Dissenters do so, and maintain their pastors without State assistance or legacies from the past. Classing them all as Protestant Dissenters, the figures quoted above show that they have built and kept up 377 places of worship, while the Establishment possesses no more than 405. Yet Churchmen, as a body, are wealthier than Dissenters. Are we, then, to suppose that their faith is cooler, and that among them the lamp of sacrifice burns feebler or is extinguished? We are fully prepared to admit the weight of the rejoinder about the difference in cost of constructing a chapel and a church; but when we have done so, that does not disprove the existence of energy and devotion among Dissenters, and of lukewarmness among Churchmen. If the learning and eloquence of a brilliant episcopacy and priesthood cannot quicken the zeal of Churchmen for their faith to the length of making their sacrifices for church extension keep pace with the increase of their wealth, still we contend that church extension is not to be obtained by church destruction. With the recent examples of the munificent exertions of laymen in this direction—of Miss Burdett Coutts, the Misses Monk, Mr. Hubbard, and Mr. Beresford-Hope—the laity cannot be so torpid as it is made to appear. Its zeal would be quickened if the Church herself set the example. A belief is current that the revenues of the Church are ample to satisfy all existing wants, if properly administered. Laymen read of sees the holders of which receive princely incomes, and apply them to the enrichment of their families; of Church lands leased for inadequate rentals, that present incumbents may pocket large fines; and of other sources of revenue which are diverted from the service of the Church. A case in point has been just published, which, without assuming a personal character, will admirably illustrate our proposition with respect to the perversion or diversion of Church income. Finsbury prebendary is in the hands of the Ecclesiastical Commissioners, and yields an income of £7,000 a year. In seven years the income will rise to £66,000 annually. The greatest exertions are now made to prevent this sum being applied to the erection of episcopal palaces, and to enhancing the rank and dignity of deans, while Londoners are without sufficient church accommodation, and are asked to demolish the monumental works of their fathers to supply the wants of new localities. The income of the prebendary it is sought from the Ecclesiastical Commissioners to have applied to provide endowments for fifty existing churches now without them, and for one hundred new churches to be built. This would leave a balance of £26,000—or interest, at 3 per cent., on a capital of upwards of £860,000—for the erection of the fabrics. Surely here are means to provide the requisite church extension, without imitating the Vandals of the French Revolution. Let the Commissioners announce such an appropriation, and the laity will not be backward in aiding the good work to the utmost of their ability.

We have hitherto treated the question on general grounds, but if we narrow it to the case of St. Mary Woolnoth—and every case should be treated on its own grounds—the contemplated act of vandalism will appear particularly odious in an architectural point of view. St. Mary Woolnoth happens to be the *chef-d'œuvre* of Nicholas Hawksmoor, the favourite pupil of Wren; it was built in 1719. The exterior is original and bold, remarkable for the solidity of its appearance, heightened by deep rusticated work. If it does exhibit some trace of heaviness, it also shows an air of magnificence, combined with harmonious simplicity of decoration. The interior is effective and well proportioned, "sumptuously beautiful," and ornamented with bold and rich decoration, and the plan remarkable, withal, for classical simplicity and harmony. And this is the structure which all critics agree in praising, and is one of the few architectural monuments in the City, that is to be destroyed, under the sanction of the highest dignitaries of the Church.

INSTITUTION OF CIVIL ENGINEERS.

At a meeting of this Institution, held on the 4th inst., JOHN HAWKESHAU, Esq., President, in the chair, papers were read by Mr. E. L. J. BLYTH, member, "Description of the Loch Ken Viaduct, Portpatrick Railway," and by Mr. H. P. BRERETON, member, "Description of the Centre Pier of the Bridge across the Tamar, at Saltash, on the Cornwall Railway, and of the means employed in its Construction."

At the monthly ballot the following candidates were ballotted for and duly elected:—Sir John Benson, Messrs. J. F. Blair, D. Hutton, E. Johnston, J. Kershaw, T. E. M. Marsh, R. Milligan, R. Smallman, and W. G. Smart, as members; Messrs. H. H. Bigg, J. Gordon, J. M. Harkness, R. Hodson, J. Oliver, and J. Pickering, as Associates.

On Tuesday, the 11th inst., Mr. C. A. HARTLEY read a paper, entitled "A Description of the Delta of the Danube, and of the Works recently executed at the Sulina Mouth." The discussion was adjourned to the 18th inst., when, if time permits, Mr. James Abernethy will read "A Description of Works at the Ports of Swansea, Sillith, and Blythe."

THE ROAD ACROSS THE PARK.

AFTER repeated attempts to do something very absurd, our crotchety and headstrong First Commissioner of Public Works has at length been forced into a sensible line of action; but, even with his head put straight to it, and with every detail clearly defined, he still wishes—as we shall presently show—to swerve crookedly in pursuing it. The deep trench and the close sewer are both abandoned. The necessity of a new bridge over the Serpentine, or of a tunnel beneath it, are given up. The common folk, in hired vehicles, are to cross the park in the broad light of day, and in full view of the tenderly-caared-for equestrians. A portion of their exercising ground is, moreover, to be appropriated to a more extended public use. For this inch of sacrifice an ell of compensation will, doubtless, be sought hereafter in Kensington-gardens; but we must not look a gift horse too scrutinisingly in the mouth. We think ourselves only too lucky in that one, even if Sir R. Mayne's excellent suggestions are conceded to us. The plan now—finally, we hope—settled, is to enter Hyde-park from the Bayswater-road at the Victoria-gate, and to make use of the present roadway as far as the bridge. This, as our readers are aware, makes a sweep round the powder magazine. Now we should like to know why this out-of-the-way curl in the road could not be dispensed with, and the much shorter route behind the magazine be adopted? The road as it is, by its twistings and turnings, extends to nearly double the length of a direct road; the necessity for increasing it is not certainly perceptible to us.

The present railing, which divides the roads on the bridge, is to be removed some 8 feet, so as to increase the width for the expected traffic. This is judicious; but the granite piers at either end will be great obstructions, and will seriously impede the traffic. The contractions of the road which they occasion are, perhaps, unavoidable on the bridge, but they seem in Mr. Cowper's mind to establish precedents which he feels bound to follow.

On quitting the bridge the road again turns to the left. This road it is also proposed to widen some eight feet, but rather than fell one solitary tree, or go in a direct line, a contraction is marked out in the very centre of the road, reducing its width at this point to under 30 feet. A road of irregular width, with a large traffic, is, as every one knows, the most difficult to keep clear, and yet, with two unavoidable contractions on the bridge, Mr. Cowper must needs inflict a third upon us within fifty yards of it, and this without the slightest necessity. There is no need to bend at all to the left on quitting the bridge; by slicing a few yards from a useless angle of Kensington-gardens, and filling up the ditch which now runs from the bridge to the corner of Rotten-row, and which separates it from Hyde-park, with the superabundant gravel ready to hand upon the ground, a broad footpath might be obtained and the present one added to the roadway. Two birds might thus have been killed with one stone; but Mr. Cowper will always use two stones to one bird. We may be told that a railing would then be required on the dwarf wall which bounds the property. We grant that, but in doing so we must add that the enclosure would then be effectual, which the present miserable contrivance is not, and that money would readily be granted for a manifest improvement. The road, after joining Rotten-row, does not cross it direct to the Exhibition, but continues in a westerly direction, so as to enter the Kensington-road opposite Prince Albert's-road, at the far end of the Exhibition building. This, at first sight, appears an unnecessary elongation of the road; but it should be remembered that the eastern entrance of the huge building will be of necessity the most crowded, and that any risk of a "block" at the junction with the Kensington-road is above all things to be avoided. An extended road of some 350 yards is more than compensated for by greater facility in reaching the building, and by decreasing the pressure in the most threatened portion.

The debate in the House of Commons, when Mr. Cowper asked for a vote of £2,000 to make this temporary road, proved clearly that in a multitude of counsels there is not always wisdom. "Every one," as Lord H. Lennox remarked—and he himself was no exception to the rule—"consulted his own convenience when some self-denial and forbearance might have been expected." Cavalry was pitted against infantry. Carriages, in Mr. B. Cochrane's opinion, ought not to encroach upon the equestrian's domain, either on the bridge, or, still greater sacrilege, in Rotten-row. He would batter at the children's peace by sending the vehicles through Kensington-gardens.

Perhaps, like Malcolm, "he has no children," and, therefore, "can dispute it like a man," but his opposition would almost lead one to believe that he had a large pecuniary interest in hired saddle-horses. Fortunately, although he "would still be talking, nobody marked him." Sir Morton Peto suggested a timber footway outside the present bridge, but his mention of Captain Fowke, and of his "signal success at the Exhibition," raised a laugh which puffed out the worthy Baronet's kindling idea; and Lord Elcho subsequently put an extinguisher upon it, amidst the cheers of the House. This little incident was worth the whole debate. Mr. Cowper's adopted plan—it is really a slight modification of Sir Morton Peto's—was, however, too simple and too easy of accomplishment for a sustained opposition, and the £2,000 were granted, but only after as great a discussion as that which was given to a vote of £14,000,000 a few nights previously.

We are not so sanguine as to imagine that the two practical amendments to the plan which we offer will be carried out, although no person who examines the site can fail to perceive their value; but, with them or without them, the new road will be a great boon, not only to the adjoining parishes, nor even to Mr. Cowper's expected Australian, but to the public at large, who, without it, would have been jostled and crowded in narrow streets by people who had no topographical reason for being near them.

PRE-RAFFAELLITE PICTURES.

MESSRS. Christie and Manson have within these few days, sold the largest collection of modern pre-Raffaellite pictures which has yet come to the "hammer." They were the property of the late Mr. Plint, a stockbroker, at Leeds, and cost him about £25,000. The varied style of art purchased by him—for although he possessed more pre-Raffaellite pictures than perhaps any other collector, among his water-colour drawing and oil pictures were found works of great merit by living artists—leads to the conclusion that he had been persuaded to lay out large sums in that peculiar method of painting, in the hope that it would become in the course of time a valuable property. The sale, however, to which we are now directing attention, has to a certain extent dispelled that illusion. An experience, if no benefit to him in his grave, may, we hope, prove beneficial to others who entertain the same belief in pre-Raffaellism. The value of that hope will be found in the three following instances: "The Carpenter's Shop," by Millais, which, we believe, cost him upwards of £1,000, was sold to a dealer for 500 guineas; "Christ Washing Peter's Feet," by Madox Brown, which also cost him a large sum of money, was knocked down for 90 guineas; and the last picture in the sale by the Belgian pre-Raffaellite, Henri Leys, for which he paid £15,000, brought no more than 800 guineas. That very profane picture, called as profanely the "Carpenter's Shop," being the boyhood of Christ, has already gone back to nearly its first price, viz., £500. As more than £8,500 has been lost on the sale of this collection, it may be assumed although most of the other pictures by the Millais-Hurst-Brown school brought monstrous prices, that the loss upon them was proportionately large, especially as the pictures painted by legitimate artists obtained excellent amounts.

The downward tendency of pre-Raffaellism, of which we have so constantly warned our readers, has set in earlier and more decidedly than was to be expected. Indeed, it is scarcely possible to calculate how far it has already gone, because the result of Mr. Plint's sale, marked as it is, gave but a very feeble and uncertain idea as to the real state of the market for such commodities. At the commencement of the picture season it is usual with the trade, if no good genuine collection is to be sold by auction, to get up a sale of their own, at which the purchases are of the most friendly kind, the object being merely to establish prices for the rest of the London season. If this proceeding is necessary with regard to the ordinary productions of art, how essential it must be with works of so doubtful a permanency, and for which there are comparatively so few buyers, as the paintings by pre-Raffaellites. Thus, had not the dealers in them bid liberally at the sale, the whole concern would have "caved in," and not only would have immediate selling been stopped, but future operations would have become hopeless. Under these circumstances it may, we think, be fairly argued the £8,500 lost upon this sale does not represent with accuracy the real deterioration in pre-Raffaellite pictures. Besides the causes given above for the delusion being kept alive as long as possible, it has another source of vitality through having become a party question, but unlike Swift's saying that "party is the madness of many for the gain of a few," it is the madness of a few for the gain only of a few, for there are dealers who won't "keep the article," and if we may judge from the audible remarks and laughable jokes passed in the room during the sale, a very few of the lunatics could have been present—we except, of course, those who have "method in their madness"—the sellers and the makers of the peculiar merchandise.

But out of this madness let us endeavour to extract something useful and remarkable. With respect to the latter we wish to direct attention to the want of consistency or style in the works of the leading pre-Raffaellite painters. Take the drawings by Millais to the "Framley Parsonage," "The Carpenter's Shop," and the "Black Brunswicker"—all three as different in treatment as it is possible to conceive. Take "Christ Washing Peter's Feet," "Our Lady of Good Children," and the "Last of England," by Madox Brown. Again, take "The Return from Marston Moor," "Gondomar witnessing the Execution of Raleigh," and "Elaine," by Henry Wallis. Each of these painters has produced results among these pictures belonging to epochs of art from the Mediæval period to the present day, and we are asked to believe that they are eminently sincere, earnest, and honest painters. Madox Brown painted his most Mediæval pictures last year, and the other the year before; but his picture most modern in style was painted in 1852, a period of ten years before the others. The most Mediæval picture, the "Return from Marston Moor," by Wallis, was exhibited two years ago. As to Millais, it must, however, be admitted that the most affected of his pictures in the sale was painted in 1852, but the tone and finish he displayed at that time are both lost in his more recent work, the "Black Brunswicker." There is another remarkable fact worthy of notice, which is that pre-Raffaellite pictures do not improve in tone with age. The yellowish red satin of the lady's skirt in the "Proscribed Royalist" is as much like copper as it ever was, and the white satin dress of the lady in "The Black Brunswicker" is, if possible, more like tin than when it was first exhibited. In conclusion, we think the following hint may prove useful to young painters. It was decidedly proved at the sale, that whether a picture was painted by a pre-Raffaellite or not, brilliant effects of light and vivid colouring, subjects of human sympathy and strongly-marked expression, obtained the most attention and brought the largest sums of money, particularly if distinguished by a quaint and catching title. The fact being so, there is not the slightest excuse for attempting old-fashioned quaintness or absurd antics in art. A good subject, well and legitimately painted, will certainly meet with a liberal reward.

A LATE COMBATANT.

IF it were possible for any one to slumber uninterruptedly for a twelve-month, we should think that such a calamity had befallen a gentleman who in the current number of the *Art Journal* signs himself "an Architect." He seems suddenly to have awaked to a sense of the utter ugliness of the new Exhibition, and, like a boa, he attacks his prey with a voracious appetite, even before he has had time to inquire whether it be worth a display of his energies, and whether it has not already been done to death. We do not notice "an Architect" with a view of defending the Exhibition; but he takes upon himself to censure the lions of the profession for omitting previously to demolish so outrageous a defiance of their taste. He complains that the architects—by which we suppose he means the heads of the professional societies—said nothing, and that the *Builder* and *Building News* also said nothing, although the most inexperienced in art regarded the building with suspicious misgivings. We would here recommend "an Architect" to turn over the last volume of our Journal; he will there find that not only did Mr. Tite, in the name of the Institute, deem it his duty to "protest against the official exclusion of architects from the councils of those who assume to represent the taste of the nation in the various branches of art," but he anticipated (see page 871) the cheers with which "vulgar unreasoning abuse of our profession" was received at the Society of Arts, and which seems, from "an Architect's" letter, to be the spur which has occasioned his spasmodic action.

Mr. Blomfield, also, in his inaugural address at the Architectural Association, spoke of the "monster which is now developing its vast anatomy at Brompton," and which "was hatched without the decency of even a nominal architectural incubation." Moreover, we have ourselves in special reports never failed to point out the defects of the building—the long line of dullness in the Cromwell-road, the mistake of believing bigness and grandeur to be synonymous terms, the want of harmony between the forms of the nave and the courts' roofs, all of which "an Architect" fancies he has newly discovered. We have praised the lighting of the picture gallery whilst condemning its decoration, and have protested against filling the senseless blank arcades with mosaics, or spending a penny in the vain attempt to render the building passable. We have done even more than this—more even than "an Architect" does now even in two pages of piled-up censure—we have shown that Mr. Meeson has been entrusted with the task of preparing all the detailed working drawings, so that even the merit of construction is not even due to the military engineer, and that Mr. Sykes and his pupils have designed what few decorative features are seen in the building. We have certainly applauded the untiring exertion of the contractors, and have not even refused simply because Captain Fowke was not "a regularly educated architect," to give him praise where we believed he fairly earned it. Nearly every newspaper has lamented the want of taste flauntingly displayed at Brompton. Mr. Cole, in his handbook, is its only avowed champion; he loves it with the affection of a maiden aunt, and the *Times*—for reasons which could be easily explained—is but a windy expansion of Mr. Cole.

We are at a loss to see the object of "an Architect's" letter. In one part he fears that "foreign visitors will look upon the building as the best thing that we could accomplish, when we set the full architectural power of the nation at work," whilst at the end of his communication he says, that the building by its ugliness "acquits the profession, that foreigners well know we have amongst us architects of the very highest ability." It is certainly too late to prevent the building answering the purpose for which it was built; when there was a chance of the "job" being frustrated, we did our best to defeat it; now that the building is an accomplished fact, it is idle to be for ever harping upon the same string. If we have an ugly house and are obliged to live in it, let us smother our ill temper and show our own taste by furnishing it artistically and creditably, and be determined to withhold even a shilling towards covering with mosaics that deformity which ought never to have afflicted the eyes of friendly neighbours; one might as well set diamonds in the trunk of a tree as put Lucca della Robbia work on the Cromwell-road front. It is of no use wailing over that which cannot be remedied; let us rather look ahead and guard against any similar surprises. We have yet to learn the real object of the picture gallery having been made a permanent building; to prevent South Kensington from being for ever a hot-bed of amateurs who believe they know everything because they have learnt nothing, and to make it what it was intended to be, a School of Art and Science.

The fault which "an Architect" finds with the building are most of them true enough, but we think if he had devoted the time given to his long article to a careful perusal of the *Building News*, he would not only have seen the utter inutility of publishing it, but, at the same time, had reason to get rid of his complaint against the architects and ourselves. But if our surprise is great that "an Architect" should have supposed us guilty of indifference in the matter, it is still more so that our contemporary the *Critic*, should endorse that portion especially of his communication. It ought to know that the press, with one exception only, has repudiated the Exhibition building as an exponent of English architecture, as well as it knows that that repudiation is deserved. It is rather too bad after doing a soldier's duty to be told by the latest reinforcement that one has been all day carousing in the enemy's camp. When another fight has to be fought, although it be a losing one, we hope to find "an Architect" and the *Critic* by our side at the commencement of the fray.

ST. STEPHEN'S CHURCH, SPITALFIELDS.

THIS church is a plain, but substantial structure, designed to fit a site of very peculiar shape. It is consequently somewhat unusual in its external form, but so arranged as to occupy and make available for accommodation every foot of ground upon which it stands. Its most striking peculiarity is the western apse, which, though not unprecedented, being by no means an uncommon feature in German churches, has not hitherto been much used in this country. It is in this case the natural termination of a nave, the centre line of which strikes upon the angle formed by two streets, and it is by the adoption of this form that every part of the site has been rendered so entirely available.

The church was originally designed with two towers, terminating in spires, but the most stringent economy having to be practised in every part, they were necessarily omitted.

Exclusive of the apse and chancel and its aisles, the form of the church within is an exact square, of 61 feet 6 inches, divided into nave and aisles by arcades, supported by four pillars only, two on either side.

The nave is 28 feet wide; the north aisle, 15 feet 8 inches; the south, 12 feet 4 inches. The chancel is 28 feet by 19 feet, and the depth of the apse, 31 feet. On either side of the chancel are aisles continuous therewith, exclusively occupied by children's seats. The height of the nave to the square is 27 feet, and to the ridge 49 feet, being 15 feet less than was originally intended.

The aisles are divided externally into three bays, each surmounted by a gable, for the purpose of admitting large three-light windows, on which the illumination of the interior chiefly depends. The apse has two stories of windows—one below the gallery, stepped up in gradation to its rise, and the other of narrow openings above the backs of the seats. The eastern end of the site being to be blocked by houses, a window in the gable only was practicable, and the chancel is lighted by side windows over the roofs of the children's aisles.

The walls of the church are built and faced with plain stock bricks, intermixed externally with red and black bricks; and the arches and piers internally are faced with red and white bricks.

The church is fitted with stained deal internally.

Every part of the building is finished very plainly, the capitals of the pillars, corbels, &c. being the only parts in which carving is introduced.

The cost of the building has been as follows, the amount having been considerably increased by the great rise in the price of bricks, which occurred before the contract was taken:—

Builders' contract and additional works, including carving, and £558 for extra foundations.....	£6,013
Heating apparatus and flues, by Haden, of Trowbridge....	189
Gasfittings by Skidmore.....	126
Bell and fittings.....	26
Fittings and furniture.....	29

Total£6,383

The architect was Mr. Christian; the contractors, Messrs. Browne and Robinson; clerk of works, Mr. J. O. Abbott. The foundation-stone was laid in October, 1860, and the church was consecrated on December 6th, 1861. The church answers admirably acoustically, seats in the extreme end of the apse being equally good for hearing as those in the body of the nave, and, owing to the width of the nave, and large span of the arches, there is not a seat in the church which does not come within view of the preacher.

PROFESSOR BARLOW, F.R.S.

WE have to record the death of Professor Barlow, the author of the "Strength of Materials" and many other works. He was born in Norwich in 1776. In 1806 he was appointed one of the mathematical professors at the Royal Military Academy at Woolwich, which office he held until 1847. His discovery of the means of correcting the local attraction on the compasses of ships brought him into great notoriety, and he received the Copley medal, and was elected on the Council of the Royal Society. The Board of Longitude conferred upon him the reward provided for useful nautical discoveries. The Emperor of Russia acknowledged the value of the invention, and presented him with the diploma of the Imperial Academy of Sciences at St. Petersburg, and he was elected a corresponding member of the Institute of France and the Royal Society of Brussels, besides other rewards and honours. He was associated with Mr. Telford in experiments for the Menai-bridge. He was then consulted in reference to the removal of Old London-bridge. In 1836 he was appointed one of the Irish Railway Commissioners, with General Sir John Burgoyne and the late Mr. Drummond, and subsequently appointed on three other royal commissions relating to railways in England. In 1847 he retired from the Royal Military Academy, and the Government awarded him his full income for the remainder of his life, in consideration of his eminent services. His simple and upright character, and his kind and cheerful disposition, endeared him to a large circle of friends. He died on the 1st of March.

THE NEW COPYRIGHT BILL.—The proposed Bill for amending the law relating to copyright in works of the fine arts, and for repressing the commission of fraud in the production and sale of such works, provides that the author of every painting, drawing and photograph which shall be made, or for the first time sold or disposed of, either in the British dominions or elsewhere, after the commencement of this Act, and his assigns, shall have the sole and exclusive right of copying, reproducing, and multiplying such painting, drawing or photograph, and the design thereof, by any means and of any size, for the term of the natural life of such author, and seven years after his death: provided, that when any painting or drawing shall be for the first time sold or disposed of after the passing of this Act, the person so selling or disposing of the same shall not retain the copyright thereof unless it be expressly reserved to him by agreement in writing, signed at or before the time of such sale or disposition, by the vendee or assignee of such painting or drawing.

THE ALBERT MEMORIAL.

ON Friday last the Committee of Advice nominated by the Queen to assist her Majesty in the choice and mode of execution of a design for the proposed national memorial, held a meeting in the Council-room of the Fine Arts Commission at the Palace of Westminster.

The brief notice of their preliminary meeting, which appeared in the BUILDING NEWS, has resulted in a number of communications being addressed to the Committee by the owners and lessees of granite quarries in various parts of the country, relative to their respective capacities to yield a monolith of adequate grandeur for the proposed memorial. A perusal of these tends to dispel the notion, which had been previously entertained in some quarters, that the search for a single stone of the requisite dimensions in this country would be attended with incalculable difficulty. The Ross of Mull Granite Company state that they can supply a monolith of red granite larger than any known column in existence. The obelisk in front of the Winter Palace at St. Petersburg, they say, is the largest one in Europe, measuring 93 feet. They state that they can exceed that by at least 7 feet in length, and with a corresponding excess in diameter. This stone, said to have been hitherto unnoticed, is reported by their manager, Mr. Marshall, to have been discovered in the Tormore locality, and, what is still more remarkable, to be already quarried on three sides. It is described, moreover, as lying just at the surface of the ground, with a fine open field in front on which it could be rolled out and "scabbled." It has an even surface, is quite detached at top and bottom, is perfectly sound, and of a good red colour. It is upwards of 100 feet in length, and will average about 12 feet in diameter. Besides this letter, there is also one to the effect that in the granitic formation between Penryn and Helston monoliths can be shown at this moment of several thousand cubic feet, perfectly sound, and without a single defect. These are but two examples among many others of the information which has been elicited on the subject.

The Committee was chiefly occupied on Friday in the consideration of the enormous difficulties with which the operations, first of quarrying a monolith of the desired dimensions, then of transporting it to its ultimate destination, and finally of rearing it, would be attended. Assuming, for which there is reason, such a stone at a rough calculation to weigh some 600 tons, a ton being a horse load, a faint idea may be formed of the prodigious labour and risk of conveying it to the metropolis by sea, and still greater by land. Again, suppose it to have been brought up the Thames as far as Chelsea, the question of moving it through, in some cases, narrow and tortuous streets would require a practical solution. These, of course, are considerations for the exercise of engineering skill, and are only now alluded to as confronting the proposed undertaking from the commencement.

Among others, Sir Roderick Murchison is rendering the Committee valuable assistance as to the various quarters where a monolith of the requisite proportions might possibly be found. The Duke of Argyll, who has granite quarries on his estates unleased, is understood to have made a generous proposal in the event of their capacity being proved to yield a stone suitable for the proposed national monument.

THE THAMES EMBANKMENT.

A NUMEROUSLY signed memorial and protest of owners and occupiers of wharves and other property on the Surrey side of the Thames has been presented to the Commissioners, setting forth that, between Lambeth Palace and Southwark-bridge, there are eighty wharves, in separate occupations, carrying on a variety of extensive trades, besides factories, mills, granaries, and buildings rising directly from the waterside, with drawing docks and free landing-places, and for all of which the free use of the river shore is essential. While expressing their unwillingness to offer any opposition to public improvements and relieving the evils arising from the floodings of the river, the memorialists consider that their entire trades would be seriously damaged if any material impediment should be created in the river traffic by the interruption of the landing and loading of goods. They consider that any of the plans for an embanked roadway that have been laid before the public would materially impede such traffic, and that the present flooding of the river periodically may be prevented by causing the banks of the river to be raised and the wharf walls to be altered.

CHURCH BUILDING.

Oxford.—Dunster Church.—This parish church has been restored, the whole expense—£2,000—having been borne by Sir H. W. Dashwood. The church is in the early English style, and nearly the whole of the body and chancel have been rebuilt. The arcade has been restored, retaining the old pillars; a portion of the old screen, separating the chancel from the chantry, has also been retained. The roof and seats are new. The singing gallery, formerly under the west entrance, has been pulled down, and a space of about five feet additional width has been obtained at the north side of the church. The pulpit, altar rails, &c., are new. An old piscina at the east end, formerly imbedded in the wall, has been brought to light. Two of the windows are entirely new, and others have been restored, Messrs. Clayton and Bell supplying the stained glass. At the entrance to the chancel on either side are busts of her Majesty and the Bishop.

Manchester.—New Church at Patricroft.—On last Saturday the foundation-stone of an iron church was laid in the centre of Patricroft. The intended building will be 95 feet long, 50 feet wide, and 38 feet high. Its estimated cost amounts to £1,600, and 800 adults and 200 children will be provided with accommodation. The building is being carried out by Messrs. H. C. Hemming and Co., iron church manufacturers, the clerk of the works being Mr. Bryant, of that firm. The style is to be Gothic, and the building will comprise two aisles, nave, chancel, organ chamber, and gallery for children. The walls and roof are to be of corrugated and galvanised iron. The inside of the building will be cased with wood, canvassed and papered. The space between will be left unfilled, for the purposes of ventilation, &c. The benches are to be of fir, stained and varnished. There will be an octagon pulpit of the same material, and a reading-desk to correspond. The entrances will be at the west end. A bell-turret will surmount the western gable.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post.* Gold watches, 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enables persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.
J. W. BENSON, 33 and 34, Ludgate-hill, 45 and 47, Cornhill, London, E.C. Established 1749.

OBELISKS.*

WE continue our account of the principal obelisks in the world. Two obelisks of red granite, without inscriptions, 47 and 48 feet high respectively, formerly stood at the entrance of the mausoleum of Augustus. They were brought to Rome by Claudius in the fiftieth year of the Christian era. Sixtus V., with the aid of Fontana, placed the larger one before the Church of Santa Maria Maggiore. The other, two hundred years later, was erected by Pius VI. in front of the Papal palace on the Quirinal. The base of this latter is more ornamented than any of the others, and may give our artists an idea of the effect of large blocks of sculpture at the foot of an obelisk. The famous colossal equestrian groups style, Castor and Pollux, which give the name of Monte Cavallo to the square in which they stand, are on either side of the base of the obelisk; but we are afraid that the spectator thinks little of the obelisk as he looks upon the brilliant action which the Greek sculptors have infused into their groups. There is a want of harmony in the different features of the whole group, and it could scarcely well be otherwise when we remember that one portion was fashioned and rounded by the most artistic nation of ancient and modern times, that the other was simply squared, hundreds of years before, upon another continent, and that there was nothing but the Roman art of the last century to bind them together.

The obelisk in the centre of the Piazza Navona, is, perhaps, the most picturesquely treated in all Rome. Little is known with certainty of this obelisk; it is even doubted whether it be an Egyptian work. It is of red granite, and was found, broken into four or five pieces, in the Circus of Romulus, near the Appian Way. Its height is 54 feet 3 inches, but, with its base, it is within a foot of 100 feet. It was erected 200 years ago by Innocent X. It—or rather the pedestal which bears it—stands upon a huge mass of rockwork, 31 feet high, in the centre of a fountain. The rock has an opening through it, and statues by Bernini are perched upon it. The water which supplies the fountain issues from the rock. The pedestal is somewhat wider than the obelisk, and has a small cornice on the top; a broad belt of masonry projects 2 or 3 inches from the die of the pedestal. The obelisk itself is capped by metal-work. The pyramidal substructure of this obelisk, notwithstanding the coarse treatment of the sculpture, gives the whole group a gorgeous effect. The squared obelisk and the smoothed sculpture are linked together by the rough rockwork, and the contrast of light upon the uneven surface of the stone upon the sparkling water, and the rounded marble figures, make us almost forget that Bernini had anything to do with the work.

A pair of obelisks, 17 feet high, were, in 1665, found in the gardens of the Dominican Convent, behind the Church of St. Maria sopra Minerva. These are supposed to have formerly stood at the entrance of the temple of Isis and Serapis, in the Campus Martius. Bernini, with his usual want of taste, placed one of them on the back of a marble elephant sculptured by Ercole Ferrata. It stands now, a sad spectacle, in the centre of the piazza before the church above mentioned.

Clement XI., forty-five years later, placed the companion obelisk as a central feature in the middle of the fountain, which stands before the Pantheon.

The obelisk which formerly stood in the Circus of Sallust now crowns the lofty summit of the Pincian Hill, in front of the Church of the Sta. Trinità dei Monti. Including its base and ornaments it is 99 feet 11 inches high, but it may almost be said to have the whole flight of steps which lead from the Piazza di Spagna for its substructure.

A small obelisk, 30 feet high, was, by Pius VII., reared also on the Pincian Hill. It is covered with hieroglyphics, and was found near the Church of Sta. Croce, in Gerusalemme.

The obelisk of red granite erected by Antinori on Monte Citorio was the one which so charmed Winkelfried by the beauty of its hieroglyphics. It was brought from Egypt by Augustus, and stood formerly to serve as a meridian in the Campus Martius. Its height is 71 feet 6 inches. It is surmounted by a bronze globe. Its base was formed of fragments of the Aurelian column, which were discovered near it.

There is another small obelisk in the gardens of the Villa Mattei, on the Celian Hill, but it is an insignificant specimen in a city so rich in obelisks as Rome.

There are one or two obelisks, we believe, in the Egyptian Museum at Florence, but they are of small proportions.

The magnificent obelisk which, at a cost of £80,000, Louis Philippe transported from the Temple at Luxor is well known to all visitors to Paris. It stands in the centre of the Place de la Concorde. It was brought to France by M. Lebas, the engineer, and by him fixed in its present position. A detailed account of every circumstance connected with its removal has been published, under the title of "Notice Historique, Descriptive et Archeologique sur l'Obelisque de Luxor." From it we learn that, on its being taken down, a fissure was discovered, extending up it, which, from the fact of its being secured by wooden dovetailed cramps, was evidently an original flaw in the Syene granite. The name of Rameses II., better known as the Great Sesostrius, was also found beneath it. The two monoliths were both given by Mohammed Ali to the French Government, but it was, seemingly, content with the expense and luxury of one of them. Its height is 72 feet 3 inches, and its greatest width 7 feet 6 inches, thus being rather less than the general proportion of ten diameters. A pedestal was made for it, of a single block of grey granite, from the quarries of Laber, in Brittany, which weighed 240,000 pounds, nearly half the weight of the obelisk. The obelisk is covered with splendidly cut hieroglyphics. The eastern side bears a Latin inscription, recording its removal; the western side, one in French, of the same purport; on the northern side are engraved gilt sections of the machinery used in Egypt for the removal of the obelisk; on the southern those employed in Paris. A model of the machinery was deposited in the Conservatoire des Arts et Métiers.

There is another obelisk in France, at Arles, erected in 1676, in the square next the town hall. It was found prostrate in the mud of the Rhone. It is a simple shaft of grey granite, and was for a long time considered to be Egyptian, but it is now believed to have been taken from a quarry in the Estrelle Mountains, near Fréjus. When discovered it was broken at the top, but the missing fragment was found, and is now re-attached to it. It is 55 feet high and 7 feet 6 inches square, and it tapers considerably more than any found in Egypt. It rests on four lions couchants, which are at the angles on the cornice of the pedestal. A broad landing bears the whole mass. The sides of the pedestal are inscribed with panegyrics on Louis XIV., in whose reign it was re-erected. The top is decorated in a hideous fashion, with a globe and fleur-de-lis surmounted by a gilt sun, which has eyes, nose, and mouth marked upon it.

In England we have four genuine Egyptian obelisks. The largest, 22 feet high, is that to which we have already alluded, which stands at the seat of Mr. Banks, in Dorsetshire. It was procured by Belzoni from the island of Philæ, and bears some very interesting inscriptions. Another is at Alnwick. The two remaining ones stand on either side of the Egyptian gallery in the British Museum. They are of basalt, and covered with the most exquisite hieroglyphics. The faces and figures are chiselled with rare delicacy. The outlines only are sunk at right angles about half an inch, the sculpture itself is rounded slightly, so that the most projecting portion is on the same surface as the main surface of the obelisk. These obelisks are about 9 feet high, and 1 foot 6 inches in diameter. They were captured by the British Army in 1801, and presented by the King to the National collection.

In an adjoining gallery we can see two obelisks from Assyria. The black one is the most important. It contains five panels of sculpture on each side, and the bands which divide, and the space below them, are covered with 1,500 lines of Cuneiform inscriptions, detailing a history for thirty-one years of the empire. Grotefend fixes the date of this monument at twelve or thirteen centuries before Christ. Hincks reads upon it the name of Jehu, son of Khumri, who is identified with Jehu, King of Israel. This would make it one hundred years earlier; but there can be little question, from the style of the bas-relief upon it, that it is coeval with the earliest records of the Assyrian empire. It is between 6 and 7 feet in height. A larger one near it has its sculpture more defaced, and its inscriptions are illegible. It is cut from the ordinary limestone of the country. The peculiarity of both these monuments is not only in their sculpture, but in the termination of their apices. Whilst, in Egyptian examples, the tops are finished off in the form of a pyramid, these Assyrian ones are terminated by three steps or gradines, and are flat at the top.

Another peculiar obelisk—a polygonal one—said to be Egyptian, stands before the cathedral at Catania in Sicily. It is fixed on the back of a carved elephant. In the Monumenta Danica we see an engraving of an obelisk, with a cross carved upon it, and we learn that similar ones have been found in several parts of Scandinavia. Of course they have nothing to do, except in their similarity of form, with the obelisks of Egypt. We cannot conclude this notice without mentioning that Mr. Bell, the sculptor, who has devoted much study to the subject, has adapted an entasis both to the horizontal and vertical surface of the obelisk. As a practical illustration of his theory he has designed a memorial obelisk of the 1851 Exhibition, which will be amongst the great works which are to gladden our eyes at this year's gathering. We have not yet seen Mr. Bell's work, so can say nothing of the result of his improvement, or whether even it be an improvement. He laid his ideas very fully before a meeting of the Society of Arts two and a half years ago, and his lecture has stimulated the curiosity of many people to see the work which his reflections have given birth to. The interest taken in the subject is shown by the fact that the report of the lecture in the Society's Transactions is out of print. The resolution formed by her Majesty to have an obelisk reared to the memory of the Prince Consort will increase this interest, which we can but hope will culminate in English talent hewing from British granite a nobler obelisk than any which Syene yielded to bear the records of ancient magnificence, and then to become either melancholy wrecks upon the Egyptian soil, or to be dragged thence in triumphal procession behind the victorious Cæsars.

INSURING THE EXHIBITION BUILDING.—The information which first obtained circulation as to the terms on which the building for the International Exhibition has been insured with the Norwich Union Fire Office was not quite correct in all its details; but the following particulars, which are derived from an official source, may be relied on. Soon after the contractors, Messrs. Lucas Brothers and Mr. Kelk, commenced operations, they took out a policy in the Norwich Union for £40,000, the provisional insurance being increased every month until the total stood at £175,000. On the structure being handed over to the Royal Commissioners, they opened negotiations with the Norwich Union, and the result was that it was agreed to insure the building for a year for £450,000, at 10s. 6d. per cent. premium, subject to the conditions of average. This rate of premium involved the payment of £2,362 10s., to which must be added the duty (3s. per cent.), £675, making the total sum paid to the office £3,037 10s. The Norwich Union has since transferred a portion of its weighty responsibilities to the Phoenix, Guardian, Atlas, Imperial, and Globe offices. —Civil Service Gazette.

SURFACE DECORATION.*

THE numerous objects that influence the distribution of colour in the different apartments of a building are not always under the control of the architect, particularly the movable fittings and furniture, which are generally disposed by the lady superintendent and her upholsterer, and do not always improve the effects that have caused the architect much study and anxiety to produce, but, on the contrary, frequently destroy all concord with the worst possible taste. Furniture and furnishing should be as much under the control of the architect as the other decorations of the apartment or building, and when an architect of taste is employed, I am sure the result cannot fail to produce more harmony than is generally met with in our interiors. The decoration of a wall, floor, or other subordinate part of a building, if designed on good principles, should bear the same relation to the leading objects of the room that a background does to a painting, yet not rendering it so tame and suppressed as not to attract any attention, but help to enrich the general effect without depriving the principal objects of their legitimate attention. By a due adaptation of colour and form many difficulties in design may be considerably lessened, and faults in arrangement have not unfrequently been converted by judicious treatment of surface decoration into positive beauties. Light, above all things, should be well considered. It rarely happens that an apartment is too light, but if such ever should happen to be the case, a remedy is readily found in the application of colour. This will prescribe at once the use of dark colours, because they absorb the light; red and violet surface en masse are not at all favourable to the complexion; light blue is less favourable than green. The colour of paperhangings recommended by Chevreul as producing good and appropriate results are those which present designs of a light tone, either normal or coloured grey; upon a white ground, or the reverse, and in which the pattern is at least equal in extent of surface to the ground, for a small pattern has a very poor effect in large rooms. Patterns of two or more tones of the same colour, or those that produce little contrast, are preferable to attractive and glaring designs, which destroy the repose a wall should exhibit. Hangings are made to have very chaste and excellent effects with appropriate borders. We should first consider which harmony we wish to produce—the harmony of analogy or the harmony of contrast. The harmony of contrast is very suitable to surfaces of a uniform pure tint; for instance, a pale yellow ground with a monochrome ornament may be well relieved by purple and white in small quantities, with a little blue, for white surfaces with pale grey ornament, or vice versa, are contrasted well with gold; orange, or yellow, may also be in tones with a very pure effect. The most forcible example of the harmony of analogy I can introduce would be yellow surfaces, with a border of orange, gold, or brass ornaments. The wall-covering or skirting plays an important part in apartments, where it is made high to resist the blows of chairs, &c., &c., and should be of a dark rather than of a light character, and harmonising with the carpet, which produces the best effects in dark colours. Ceilings, as a general rule, should be white, or of the palest tones of colour; and the cornice divided from it by a darker tone, particularly avoiding white parts, which would be confounded with the ceiling. The ceiling should be always separated from the walls by a darker or contrasting tint, and may be further picked out with darker tones, or relieved with gold. The doors, windows, and other furnishings of an apartment are invariably painted or stained, as the case may be, of one colour. I think these may be varied with advantage: for instance, the door performs a different office from the skirting, and should be distinguished from it by a difference of colour, while the other parts may be separated by variety in the tones. The general colour of doors may be grey, tinged with the colour of the walls; the door frame or architrave should be darker than the door. In the foregoing I have considered the uses of colour as applied to the surface, and completely concealing the materials. With some, particularly of late, the feeling is for an inconsiderate demolition of what are erroneously called shams. My space will not allow me to offer you but a limited defence for applied surface decoration; doubtless three or four coats of oil and a few yards of paper will cover a multitude of sins that would be unbearable exposed to view. I cannot bring myself to think (much as I have tried, and with due regard for the exposure of the true material) that the appearance of a stained deal door, in some positions, is preferable to a painted one, any more than I could admit that a grained deal door in imitation of oak is superior to a solid oak one. When the funds will only admit of deal as a finishing, which is mostly the case, the colour may be otherwise consistently applied without imitating any superior material, by plain tinting alone, which appears to me far more pleasing to the eye than many of the dirty stains and treacley surfaces invariably left by the stainer and varnisher. Moreover, it is not so easily renovated and cleansed, for when it is darkened by time, or dirtied and unsightly by wear, I do not see how it can be made to take its place again with the other decorations of an apartment. With regard to walls, I think stucco as applied to the interior of secular buildings can never be abolished; neither does it appear to me a sham unless a superior material is represented on it; there is nothing that offers such a ready means of giving a flat surface to receive the charming effects of colour. The question resolves itself into this, if we discontinue its use, what can we replace it with that shall be as economical and answer the purpose so well?

The advocates for "truthful building" have condemned, unmercifully, I think, the use of stuccoes and cements. There, doubtless, are many excellent arguments against their use, and for exterior purposes few will feel inclined to add to the mass of shattered incongruities that deface our principal thoroughfares; but with interiors it will be found more difficult to practise the precepts urged. One or two noble exceptions of late, however, have done much to show the practicability of the reasoning. Neither of these, though, it seems to me, have grappled with the real difficulty. What substitute can we produce for the plastered interiors of our dwelling-houses and other assembly-rooms, which are certainly as much of a sham as the plastered walls of a church? How can we give the neatness, economy, and harmony with the surrounding walls, offered by a common plaster partition? A truthful wood panelling would certainly be a very discordant substitute, unless it were continued all round the walls, which would be exceedingly expensive, and it is very doubtful if the result would be as satisfactory. Again, there are many buildings where a positively showy and grand appearance is as essential to their success as the funds for their existence; and, lastly, its use is sanctioned in a degree by the best works of the best masters of all ages, and by them converted into a medium, wherein the noblest conceptions have been pictured and rendered for ages imperishable. Let us not abandon, then, what others have turned to such good results, but rather endeavour to appropriate with consistency what universal custom sanctions, and at which good taste will find nothing offensive.

The ingenious imitation of valuable materials is sometimes so complete, that it is almost impossible to escape being deceived. I have been assured that the best judges have been mistaken in detecting the scagliola imitations of the dark green marble pillars from the real marble in the old church of St. Miniato, at Florence. I mention this as an instance to what perfection this art has arrived; of course much depends on the skill of the artist. It will be hardly necessary to observe that the greatest discretion is required in applying imitations of any kind; it is so easy to make free use of them, their cost being comparatively little is a great inducement to frequent and indiscriminate application that may lead to unfavourable results, and bring into disrepute that which, used consistently, may be worked in with great advantage.

To Italy we must turn again for the origin of nearly all our plastic embellishments. The fresco and gesso painting, the imitations of marble or scagliola, graffiti work, and many other simple and elegant decorations, that must be valued for the mind they exhibit only, for the material is frequently next to valueless. Fresco and other plastic painting is scarcely within the province of the modern architect's education, but, from the great interest now so apparent for its revival, and the prominent effect it must have in a building, induces me to say a few words on the manipulation, upon a freshly plastered wall while the plaster is wet, is said to be in fresco, and known as *buon fresco*, or good fresco, in distinction to another process, known as *fresco secco*, or dry fresco. For *buon fresco*, a plaster formed of old and very carefully slaked lime and sand is roughly applied to the wall or other surface as a first coat, upon this another of a finer quality is laid; this prepares the surface for the *intonaco*, or *fresco ground*, which is of the purest lime and sand. The application of this last coat is as follows:—The surface prepared for the *intonaco* is wetted with water until it will absorb no more, a thin layer of the *intonaco* is then applied to as much of the wall as required for the day's work, and when sufficiently dry the outline is traced from the

full size cartoon, and the painting proceeded with in watery washes; the surface must always be moist, or the proper combination with the plaster will not be effected; the colours are mixed with distilled water, and are chiefly the earthy pigments, as vegetable and mineral colours are affected by the lime. Mr. Wilson, in his report to the Commissioners of the Fine Arts, gives the following mode of working the *fresco secco*, as practised at Munich:—"The plastering of the wall having been complete as for *buon fresco*, the whole is allowed to dry thoroughly. Before painting, the surface of the *intonaco* must be rubbed with pumice stone, and on the evening of the day before the painting is to be commenced it must be thoroughly washed with water mixed with a little lime, it must be wetted again the next morning, and it is then ready for tracing the outline and painting; the surface must be constantly moistened by means of a syringe. *Fresco secco* is a good method of decorative painting, for which it is now much employed.

The application of scagliola work is a comparatively modern introduction in England. I believe the Pantheon in Oxford-street is one of the first buildings in which it was used. Lanzi mentions it as invented by Guido Fasi, of Carpi, in the sixteenth century. The Florentines have carried this art to the greatest perfection, and had a public school in the Royal Academy of Florence, for teaching how to inlay and paint it, which is in reality *gesso* painting, or plaster painted with colours in water; it absorbs the colour to a sufficient depth to allow of the surface being polished without destroying its brilliancy, and some of the effects are charmingly brilliant and enduring. This beautiful embellishment is not confined to the imitations of marbles only; the readiness with which it is adapted to any form, and the enduring polish it takes, renders it susceptible of many useful and elegant appliances; to none is more commendation due than to the inlaid scagliola work, of which there are numerous valuable specimens in imitation of landscapes, figures, flowers, in the Florentine galleries and churches, and of which here is a very beautiful work intended for the International Exhibition by Mr. Georgi, who has devoted considerable time and attention to all kinds of plastic imitation which are peculiarly Florentine, and I hope he will meet with the success his talents and perseverance entitle him to; the artistic skill in mixing the plaster to the different natural tints, and the knowledge and power of drawing required to produce a successful result, without any application of paint, can be readily conceived. The base of this material is the purest sulphate of lime, prepared with great care. Keene's cement is largely used for this purpose, and mixed with the different colouring materials of the hue required; the art of mixing these so as to imitate the marble required is kept by the artists as secret as possible; the polishing is effected by friction with grit stones to a level surface, then with felt dipped in tripoli and oil, and lastly with oil alone; a lustre is obtained as durable as the most highly polished marble. Not only may the costliest and rarest stones be successfully imitated, but any combination of colours may be produced; for instance, purple with emerald green, siena veined with purple, or any other splendid caprice that fancy may dictate.

There is another kind of wall or surface decoration practiced in Rome, Florence, &c., since the sixteenth century, and known as *graffito* work. It is very simple and effective: two layers of plaster or cement about the eighth of an inch thick, of different colours, are applied to the surface to be decorated, the lower one serving as a ground, which we will suppose to be black, while the upper one is white and softer than the under one, which enables the artist with his graver to remove that portion of the upper surface his fancy may suggest, leaving the black ground exposed. Very beautiful scroll work in outline has been introduced in the panels of pilasters, spandrels of archways, and other details, it may be said to be to an extent imperishable, and equally applicable for exteriors as for interiors. Here are some specimens from which you may judge of the effect—some are in black and white, others show the application of two colours. It is not at all expensive; it may be executed for about one shilling a foot. Somewhat allied to this class of decoration is the very interesting process of engraving on white marble; its effect is particularly chaste and beautiful; its success, though, entirely depends upon the skill of the artist, as great care and experience is required to bring out the more delicate etchings and lines. The manipulation is this: the surface of the marble is covered with a composition not acted upon by the strong acids, the lines are then traced with a fine graver on this ground, leaving the surface bare; an acid is then floated over the surface which corrodes the marble exposed by the graver, the lines are then filled in with a black composition, the whole is cleaned off, and the delicate etchings of the graver exhibit on the marble a beautiful outline with all the fineness of a pen drawing. Here is a specimen. The compactness of a marble texture for producing fine lines, is of course superior to such as Caen or Bath stone; to show the applicability of this mode of decoration to common stone, I may instance the interior of the Church of St. James the Less, at Vauxhall. Here the principle is much the same, the only difference being the incisions at the church are made with a chisel instead of the acid, and, being in freestone, are necessarily much coarser. I have been informed that the white marble pavement of the room lately built in the Museum of Natural History, at Florence, to the memory of Galileo, is engraved after this manner, and represents a full length figure of him, and all his different inventions and discoveries, with very satisfactory results.

There is one more kind of plastic imitation of marbles extensively applied in Venice to floors, and known as Venetian pavement; it has also been used very much by the ancient Romans, and known by them as *opus incertum*. It allows of being treated with much fancy and ingenuity, and when good cement is used it is very durable. It is made of small pieces of marble (or imitation thereof), of different kinds and colours, as fancy may suggest, mixed like concrete with the cement, forming the imitation required; this is floated over a well-prepared concrete surface, and when dry it is ground and polished, forming a very beautiful and inexpensive flooring, of which here are some specimens. By giving variety to the colours endless design may be introduced, which may be carried farther by applying any kind of geometric pattern; it is one of the cheapest kind of pavings known.

Mosaic is a description of inlaid work, by which a design is produced on a surface by joining together small pieces of different coloured substances. This very ancient mode of ornamentation appears to have been practised, and probably had its origin, in the land of Israel; it is not unfrequently mentioned in the Old Testament as the many coloured pavement in porphyry, alabaster, marble, and then only to call attention, as it were, to a work of surpassing magnificence. In Greece, where art in its purest form was nurtured, this thoroughly legitimate style of ornamentation flourished to a marvellous extent. It must not be overlooked that the unscrupulous Roman conquerors carried this art, and artists too, from Greece to Rome, where the taste for display and magnificence, consequent on the accumulation of wealth, afforded ample opportunities for the artist "to surpass himself." Hence the most elaborate and best work is known as Greco-Roman work. It eventually became so congenial to the feelings of the Romans, that wherever they settled we find traces of this art; there are numerous specimens in the different museums of England. The simple geometric pattern that seemed so natural to the orderly mind of the Grecian artist were limits too narrow for his inventive genius; the beautiful labyrinth or fret, the ingenious imitations of the ever-varied anthemion or honeysuckle, the more complicated guilloche, and flowing lines of scroll work, in turn yielded to the more fascinating representations of real life, and pictures were produced rivaling in brilliancy of colours and variety of tint the finest productions of their best artists, with even the reflected lights so perfectly rendered that the very critical were forced to admire these wondrous works of patience and perseverance of the unrivalled Grecian artist. The finest specimen of their most elaborate work is known as "Pliny's Doves," or the "Doves of the Capitol." It is supposed to be a copy of the celebrated work of Sosos, of Pergamos, described by Pliny hence its name, and is in the museum of the Capitol at Rome. It is engraved and fully described in Cardinal Furlletti's treatise on Mosaic; he counted no less than 160 emblems of marble in one square inch. This valuable relic was found at Hadrian Villa, at Tivoli, 1737. Digby Wyatt describes it as follows:—"It represents a metal basin, on the edge of which four doves are sitting, one of them is stooping to drink; the shadow cast by it, and even the reflection of part of the head in the water is beautifully given; the execution of the plumage, the heads and eyes is most minute." This, like other arts during the decline of the empire, was neglected and abused, but never entirely lost; the asylum offered to Greek artists by the removal of the Government of Rome to Byzantium, for a while revived the dying embers of this beautiful embellishment and gave it a more exalted application, but its genuine purity was gone. The Eastern glitter and fictitious show was too much to their disordered minds, so the last faint sparks of Classic art died out, and left but a sorry substitute. Not only were they separate from all that could give grace and feeling to their works by leaving the hand of their birth, but a more powerful and relentless influence blasted every effort of art to rise, not only condemning but destroying the noblest works of their forefathers, because they exercised a religion they were taught to reverence, because

* Paper read before the Architectural Association by Mr. R. O. HARRIS. Continued from page 161.

they were Pagans. Well do they merit, indeed, the appellation of the dark ages. Thus left to their own resources a somewhat new style was the result, partaking of the gorgeous luxuriance of the East, and known as the Byzantine type of Christian Mosaic. About the fourteenth century fresco painting produced a powerful rival to this popular style of surface decoration; the gold grounds and swarthy visaged saints, with all the conventional inexpressiveness and primitiveness peculiar to early Christian art, gradually yielded to the more imposing and readily applied fresco; but the Mosaic art was too widely spread and too congenial to Italian soil ever to be entirely forsaken. The dawn of a brighter age now gradually lighted up that barbarous one of destruction and darkness coeval with the introduction of Christianity. The light of learning and a free unprejudiced mind soon enabled the artist to value the ruins he had scorned, and surely they have left us most gratifying results. At Rome a successful attempt was made to restore the *opus figulinum* or *fictile* work common to Rome and Byzantium, and known as Modern Roman, with which the dome of St. Peter's is decorated, and numerous other buildings in Italy. There is a manufactory for teaching and learning this, supported by the Papal Government, at Rome; simultaneous to this was also started at Florence the restoration of the *opus sectile* with equal success, now known as the Modern Florentine.

I trust this brief historical digression from my subject will not be out of place; it will assist very much in rendering more comprehensive the further observations I have to make on the peculiarity of each kind of work, and it is very essential it should be rightly understood.

You will thus perceive there are three easily remembered divisions of our subject—the ancient, the mediæval, and the modern. This is a general division of the subject by those who have devoted much time to its classification. The most prominent of them are Ciampini and Purietta, whose elaborate works on the subject may be consulted with advantage by those wishing to thoroughly study the subject. To Mr. Digby Wyatt's treatise on Mosaic I am also much indebted for much information.

Ciampini gives the following classification of the subject. The Roman mosaic he divides into four styles:—1. The *opus tessellatum*, the most common kind, formed of cubes of different coloured stones or earthenware. They are seldom more than three-quarters of an inch square, or of a lozenge form and other shapes, ground or worked to the forms required. The Greek fret and its variety is a favourite border pattern to which these tesserae are easily applied. There are several imitations of this in the modern form of paving tiles. 2. The *opus sectile* is a class where ornamental forms, figures, &c., were cut out of slabs of marble and carefully fitted together; this is also called the *opus Alexandrina*, for having been introduced by Alexandria Severus. The pieces are sometimes of considerable size and of the most valuable material. The Pantheon, at Rome, is a fine specimen of this kind of work. 3. The *opus figulinum*, or *fictile* work, where the pieces are made of a kind of coloured glass, consequently, much less costly than the foregoing. Moreover, it is capable of giving an unchangeable gold ground, and admits of very extensive application, being readily cut in any required shape, and obtained in all variety of colours; it was first used in the Bath of Agrippa, 24 years B.C. (Pliny). 4. The *opus vermiculatum*, the most elaborate and costly description of mosaic work—the *travo picture de musico*; it embraces the true imitations of all figures, ornaments, and pictures in their proper colours, lights, and shades, by extremely small cubes of marble and glass, not unfrequently aided by the rarest gems. The before-mentioned "Pliny's Doves" is an example of the capabilities of this work.

The great difficulty of this kind of representation can be easily imagined, when every tint and variety of it must be given as in reality, and frequently by coloured pieces of material not the twentieth of an inch in diameter. There is yet another kind allied to this last, on which ancient artists appear to have spent much labour, in representing articles that appear on the floor as if fallen there. The masterpiece of Sosos, of Pergamos (the author of Pliny's Doves), was the Unwaxed Hall, and represented the fragments that would be found on the floor after a banquet. Mosaic work has also been applied to objects in the round; it is generally of a rude kind of work, and appears to have been beneath the notice of the best artists. There are some very eccentric specimens of this work applied to the hollows of twisted columns in the Museum, at Kensington, which, I think, cannot be cited as a very happy style of application. The next division is the Mediæval, or that known as the early Christian, extending from the time of Constantine to about the thirteenth century, and is more particularly known as Byzantine Glass Mosaic, and is but a further development of the *opus fictile* of the ancients; its application was mostly for mural decorations and church furniture of almost every description; it was a coarse kind of work, very far removed indeed from the perfection of the old Roman work. The pictures are frequently of a very large size, and the tesserae very irregular; the workmanship is also exceedingly coarse, yet their effect is stated to be very impressive; the brilliancy of the different coloured glasses, and the gold ground common to this class of work, is certainly capable of producing a splendour of effect not easily forgotten. Another application of this glass, or *smalto*, as the Italians term it, is to pavements, and known as glass tessellation; slabs of marble inlaid with different pieces of this material, composing the most elaborate geometric and other flowing patterns in colours and gold, and not unfrequently associated with the most valuable stones. A groove about half an inch deep is cut in the marble, and the different coloured *smalto* cemented in. The last kind of mosaic I will mention, from its purity of material and simplicity of arrangement, could not die. Neglected as it was, it struggled on, and burst forth again and again with new vigour; its Byzantine form may be considered a revival of the *opus sectile* of the ancients; grooves were cut in the slabs of the marble as in the preceding kind, but instead of coloured *fictile* material, small cubes of tesserae of the most costly marble were introduced in an endless variety of form and colours. A further development of this took place in the thirteenth century; advantage was taken of the natural colour offered by the material for natural and other pictorial representations. Limited at first to simple geometric forms, it gradually gave place to the more complicated arrangements known as Modern Florentine work, which brings us to the last division of our subject. The pieces of marble or other precious material, as agate, jasper, &c., &c., in the form of veneers on slate, were so shaped that the projection of one fitted into the recesses of another, their varied tints expressing the colours, lights and shades, of the representation intended. This beautiful work attained great perfection in the fifteenth and sixteenth centuries, when large historical compositions have been elaborately rendered in lights, half tints, and shadows, by means of the contrast of three marbles only (D. Wyatt).

The Roman is the more commonly used of the two modern revivals, the expense and difficult manipulation of the former very much restricts its use; while the universal applicability and comparatively inexpensiveness of the latter (or Roman) has gained for it that encouragement and patronage every civilised nation has yielded it but England. Surely the enormous wealth of this land far exceeds the limited revenues of the small, unselfish states of Italy, who sacrificed so much for their innate love of art and encouragement of all that is beautiful, and assisted the genius of their country.

NEW BARRACKS AT HAMPSTEAD.—The new barracks which are being built at Well-walk, Hampstead, for the 1st Royal East Middlesex Militia, are now nearly completed. The foundation-stone was laid in the summer of last year. The barracks consist of two wings, with guard-house attached. The entrance is gained by a flight of steps, which also leads to the parade-ground.

A WEIGHTY STEAM HAMMER.—Herr Friedrich Krupp, of Essen, Rhenish Prussia, whose steel works are, probably, the most extensive in the world, not long since added to his tools a steam hammer of unprecedented dimensions. The head alone weighs 45 tons, and the whole weight, including frame, anvil-block, &c., is upwards of 500 tons. This hammer has been lately employed for forging masses of cast steel upwards of 2 feet 6 inches square, and intended for mortars; but even the enormous impact of 45 tons has been found to be "too light," and it is understood to be the intention of Herr Krupp to erect another hammer with a head weighing upwards of 100 tons, the whole "implement" weighing considerably upwards of 1,000 tons.

HOUSE OF COMMONS.

TEMPORARY ROAD ACROSS HYDE PARK.

ON bringing forward an estimate of £2,000 for a temporary road across Hyde-park, Mr. COWPER said he did this in conformity with what he understood to be the wish of the House as expressed on a former occasion, when he had proposed to make a permanent road. This plan was not favourably received by the House, and he now proposed to take the means of providing a temporary road, which would serve for the additional traffic during the time the Exhibition was opened. He did not propose to make any great change—to construct a new road or to make a new bridge. His plan simply was, that carriages should be allowed to make use of portions of the park that were now reserved for riders on horseback. The line of road he proposed would enter Hyde-park from Bayswater at Victoria-gate. It would make use of the existing carriage drive until it approached the bridge over the Serpentine. The carriages would then go over that portion of the bridge now exclusively confined to riders. The road would then proceed to the south of the bridge until it reached Rotten-row. Here it would take rather less than half the present road, and then, passing to the left, it would leave the park by Queen's-gate. Carriages would then proceed to the Exhibition by Prince Albert-road. The road would be 35 feet wide, except over the bridge, where 30 feet would be sufficient. The bridge was 52 feet wide, and the space left for foot passengers would not expose them to any serious inconvenience. The sum of £2,000 might appear rather large, but the cost of making a road was from 3s. to 3s. 3d. a square yard, so that £2,000 was only a moderate estimate. The whole distance at present used by horses, and which would be traversed by carriages, was more than half a mile, namely, 1,100 yards at the width of 35 feet. A payment of 3s. 6d. a square yard would make the sum of £2,000. Less than this could not be allowed for labour, metalling, and certain railings and fences necessary in order to separate the carriages from horse and foot passengers. When the road ceased to be employed the material might be taken up and a portion of its value repaid, either by sale or other use of the material. He proposed that this road should be open to all carriages conveying passengers to the Exhibition. Hackney cabs and omnibuses would be allowed the free use of the road, but it would not be open to carts and waggons conveying goods. Any conveyances carrying human beings to the Exhibition would have the right to use the road. He might have taken a shorter course for the new road, but it would have cut up the park more. Or if they were to follow the way straight across the grass, to the south of the Serpentine bridge, the omnibuses, cabs, and carriages which would use that road would come into direct contact with those which might be proceeding from the eastward. But by the road he proposed all the carriages coming from the north would be taken out of the way of those coming from the east. He did not propose to interfere with any of the existing roads, to alter any boundaries, or to encroach on the grass, but only to alter a portion of Rotten-row, so as to enable carriages to go where riders now went. The riders would have 30 or 35 feet to themselves, and would also have the pleasure of going in the same direction as the carriages.

Mr. B. COCHRANE said there was a road going right through Kensington-gardens which had been used by riders at the late Exhibition without any inconvenience. They had only to stop Rotten-row where the gates at the end of this road opened upon it, and allow carriages to pass, and they would have a road just fit for the purpose at an expense of some £200 or £300.

Lord FERMOY supported the plan of the First Commissioner of Works, but suggested as an improvement that the whole of the bridge over the Serpentine should be thrown open to the carriages, and that a temporary pontoon bridge should be erected for the convenience of foot passengers.

Sir M. PETO said the road now proposed was, in his opinion, the very best that could be devised. Instead of a pontoon bridge, he would suggest that Captain Fowke, who had so signally succeeded in the Exhibition building—(a laugh)—should be asked to construct a footway of timber, some 13 or 14 feet wide, outside the present bridge.

Mr. LOCKE saw no necessity for the making of a temporary road to the Exhibition. No such course was adopted in the case of the Exhibition of 1851, and yet the inhabitants of London to the north of Hyde-park contrived to get to it. There were roads all round the park, and he did not see why, during the Exhibition, public carriages might not be permitted to pass along them. On the continent, cabs were not looked upon with the horror with which they seemed to be regarded in this country. Until some reason was shown why in the case of this Exhibition means of access were required which were not found necessary in 1851, he should vote against the proposition.

Lord ELCHO said that as population increased there must sooner or later be a road across Hyde-park. The Committee should look at the question as one of a permanent, and not of a temporary character. He could not approve the suggestion that Captain Fowke, who had already produced some very singular pieces of architecture, should be allowed to lay hands on the Serpentine-bridge. He thought the proposed road across Kensington-gardens the most desirable.

The vote was ultimately agreed to.

WORKS AND PUBLIC BUILDINGS.—The following facts are obtained from a Parliamentary abstract. For the royal palaces the receipts in 1860-1 were £88,099, the balance on March 31 being £30,722; for public buildings the receipts in 1860-1 were £193,418, the balance on March 31 being £90,067; for furniture the receipts in 1860-1 were £52,143, the balance on March 31 being £17,504; for royal parks, pleasure garden, &c., the receipts in 1860-1 were £160,660, the balance on March 31 being £68,751; for the New Houses of Parliament the receipts in 1860-1 were £122,321, the balance for March 31 being £47,838; for Probate Court, London and District Registries, the receipts in 1860-1 were £28,653; the balance on March 31 being £20,010; for Industrial Museum, Edinburgh, the receipts in 1860-1 were £1,500, the balance on March 31 being £15,000; for National Gallery (additional accommodation) the receipts in 1860-1 were £15,000, the balance on March 31 being £4,152; for temporary Foreign Office the receipts in 1860-1 were £10,000, the balance on March 31 being £6,213; for new bridge at Westminster the receipts in 1860-1 were £71,778, the balance on March 31 being £19,830; for Westminster-bridge approaches the receipts in 1860-1 were £83,493, the balance on March 31 being £81,662; for New Foreign Office the receipts in 1860-1 were £26,900, the balance on March 31 being £26,900; for the Nelson Column the receipts in 1860-1 were £6,000, the balance on March 31 being £6,000; for Chelsea bridge the receipts in 1860-1 were £3,511, the balance on March 31 being £950.

THE MODERN SUPPLY OF WATER IN ROME.*

THREE aqueducts convey water in Rome, viz.: those of the Aqua Vergine, Aqua Felice, and Aqua Paola; the two first are exclusively derived from springs; the Aqua Paola is partly from springs and partly from the Lago Bracciano.

The unit of measurement of the Aqua Vergine is gauged by means of a horizontal tube called *fistola*, of 7.33 English inches diameter, and 10.99 English inches in length, adapted to the vertical side of a reservoir, in which water is maintained constantly at the height of 10.99 English feet above the centre of the delivering orifice.

The discharge through this orifice under these conditions is called an *uncia* or "inch," and is equivalent to a supply of 0.103 gallons per second, or 8,899 gallons per 24 hours.

For the Felice and Paola supplies the orifice is reduced to one-half, so that an "inch" of these latter corresponds with a discharge of 0.0515 gallons per second—4,449 gallons per 24 hours.

The Aqua Vergine is the same as the ancient supply under that name conducted into Rome by Agrippa, in 732. Tradition tells at the present time, as of old, that the name was derived from a peasant girl, who pointed out the source to some weary soldiers. The present position of the source corresponds exactly with that described by the ancient writers. But, on comparing the length, rate of inclination, and volume discharged of the ancient system with those of the present day, there are ample reasons for supposing that the ancient aqueduct having been destroyed, the modern one was not sufficiently studied as to its rate of inclination, &c., so as to obtain an abundant supply.

The canal of the Vergine is about 52,496 feet in length, and it arrives in Rome at a height 73.49 feet above the sea; the rate of inclination is only about 1 in 2,000. The section of the aqueduct is 3.94 feet wide, and the quantity of water furnished 14,526,600 gallons per day. The Vergine water arrives at Rome, passing under the Villa Medici, occupied by the Academy of France, and is discharged into the "Spanish Square," where it supplies a fountain. From the latter a special conduit leads water for the Trevi fountain. Deducting the latter as waste water, the useful supply is 1,145 inches, or 10,212,200 gallons per day.

The Aqua Felice supply dates 1555 to 1590. Its length is about 108,273 feet, its height on arrival at Rome about 180 feet; inclination, 1 in 4,000; width of culvert, 2.75 feet. It comes into the city on the ancient arcades of the Marcian Aqueduct, and is distributed by means of water-towers called "Moses's Fountains." The principal branch main is laid on to the Pontifical residence. It furnishes 1,169 inches, or 5,201,623 gallons.

Pope Paul V. (1605 to 1621) caused water to be brought into Rome from new sources, but he mingled therewith the waters of the Lago Bracciano. The Paola canal is about 170,612 English feet in length; its height above the sea on arrival in Rome, 249 feet; rate of inclination, about 1 in 610; width of culvert, 3.12 feet, delivering 19,809,000 gallons per diem. This supply enters Rome on two points—one near the Vatican, for the service of that palace, the other at the summit of the Transtevere, where one portion supplies the Paulina fountain, the rest working a set of flour mills occupying one side of the principal street of Transtevere. The volume of water supplied by the Paola is 1,816 ounces, or 8,080,751 gallons. These three aqueducts furnish at present 39,618,000 gallons for a population of 170,000 inhabitants, but the actual quantity of water delivered for public and private uses is only 23,494,574 gallons—about the same amount as the town of Paris takes from the Canal d'Oureq.

As to the quality of the waters, the Vergine is excellent. The Felice is impregnated with carbonate of lime, and forms deposits, causing obstructions in the smaller pipes. The Paola does not contain salts in solution, but, like all water derived from lakes, is subject to solar influence, and rendered impure by mud and weeds.

M. Oudry has given a tabular analysis of the different waters; it is the only one he could find in the archives, and they date back some thirty years.

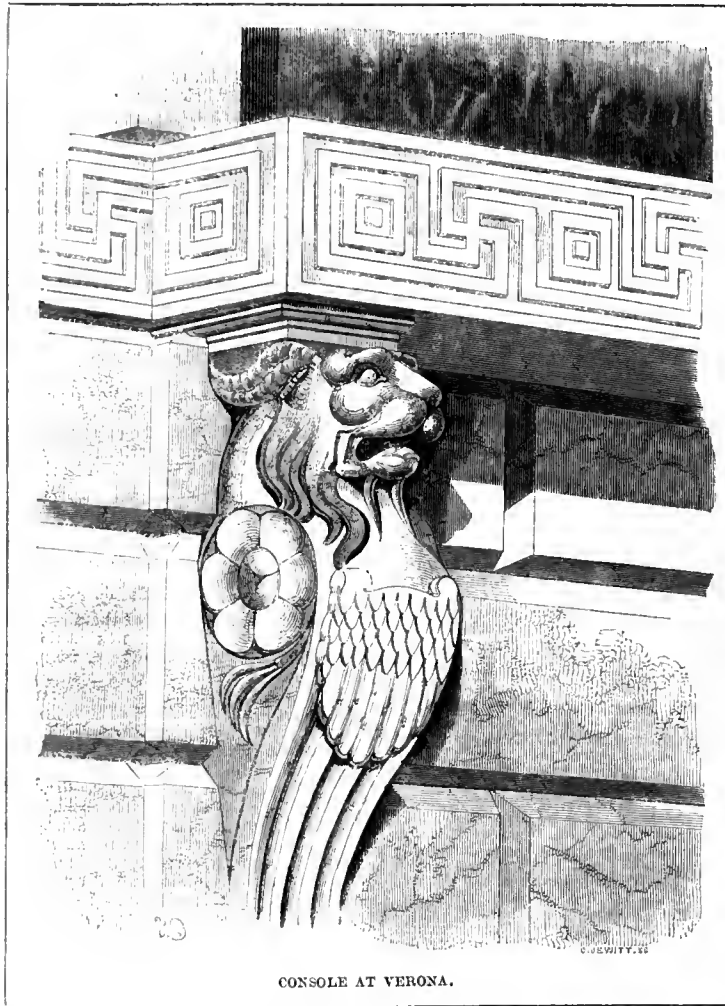
The distribution is thus arranged:—The Vergine supplies the lower portions of Rome, the Felice serves the elevated portions of the left bank of the Tiber, and the Paola is carried to the higher grounds of the right bank (Transtevere).

The public supply of the Vergine feeds thirteen fountains of a monumental character, and thirty-seven small fountains. The Felice supplies twenty-seven large fountains, and the Paola feeds ten. The flow of water is continuous, both in the smaller and in the more important fountains; among the latter we may notice the Trevi, Sixtine, and Paulina fountains.

For private use pipes are laid on, as anciently, from water towers. The diameter of the tubes is regulated according to the value of the concession; the surcharge on the centre of the orifice is constant. Concessions are

made by means of a tube 10.99 inches long, fitted horizontally to a vertical tube, in which the water is maintained at a uniform height of 10.99 inches above the centre of the orifice. To facilitate the placing of these tubes, at certain distances slabs of white marble are inserted into the façade of the houses indicating the name of the water supply, and the height to which it will rise. These concessions of water are made for perpetuity at a rate of about £150 per inch, furnishing a continual supply to a fountain in the courtyard. At present the municipal council only disposes of a single inch to each subscriber or concessionist. The different inhabitants of lodging-houses draw water from the central fountain by means of a wire guide-rope, which conducts a bucket from the higher stories to the fountain and back again by means of a rope and pulley fixed to the upper part of the window. In some buildings water is raised by a wheel worked by the sewers. Some of the well water in Rome is of excellent quality.

D.



CONSOLE AT VERONA.

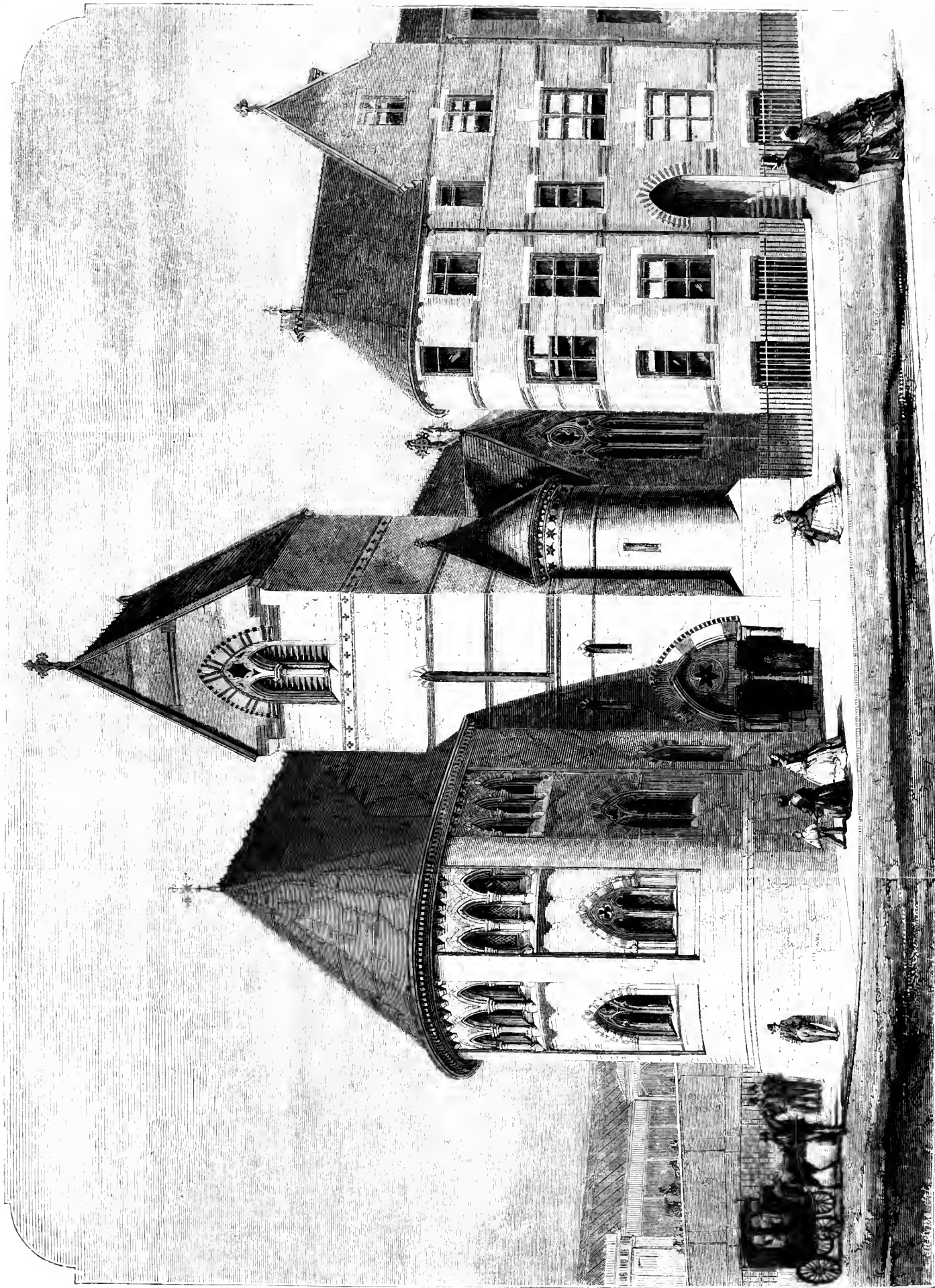
CONSOLE AT VERONA.

SAN MICHELE has left many fine buildings in his native city of Verona, but none which better attests his genius than the beautiful Palazzo Bevilacqua. Like nearly all his works, it has an arched rusticated basement, upon which a Corinthian order rises, pierced with his favourite arched windows, the whole being crowned by an entablature having a richly carved frieze. The front is divided into seven intercolumniations, three large and four smaller ones, but on the ground floor all are pierced by similar sized openings. The larger intercolumniations have, however, an additional enclosing arch which rests on imposts. Each of the windows has a bold fretted sill borne by two of the consoles, shown in our engraving. They are splendidly carved. Equally bold and fine are the trusses on the frieze, which support the widely-projecting cornice with a continuous balustrade upon it. The larger intercolumniations in the upper order are each filled by a single arch resting on imposts, and having a carved keystone and figures in the spandrels. The smaller intercolumniations are filled by a smaller arch with a segmental pediment over it, but as this does not reach to the underside of the entablature, an oblong window is introduced over it, similar to that seen in the same architect's Palazzo Canossa.

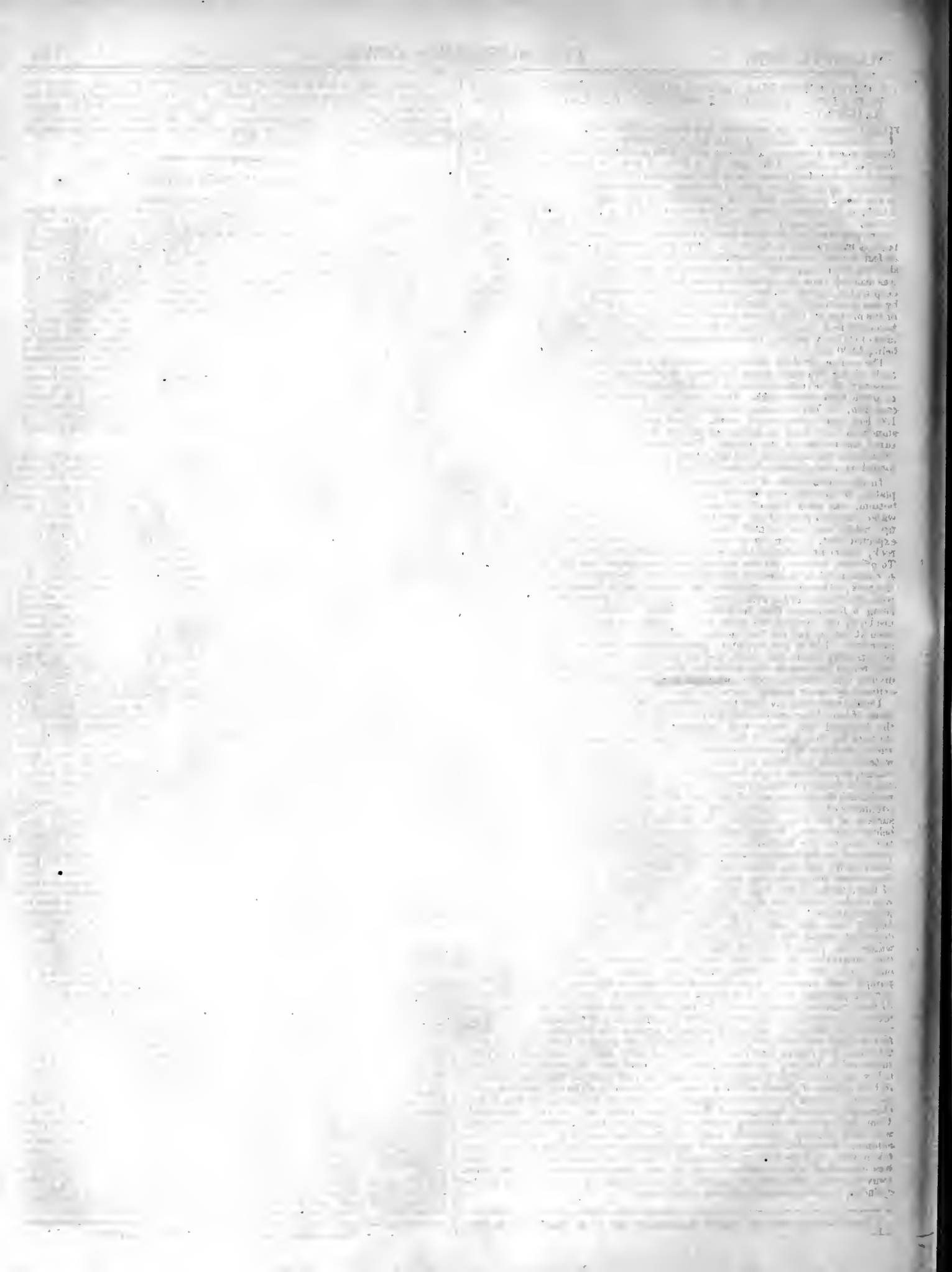
DESIGNS FOR MANUFACTURES IN THE INTERNATIONAL EXHIBITION.

The Committee upon Art Designs for Manufactures have determined to take immediate steps to secure the proper representation of the works of deceased designers. They would be glad if proprietors of designs by Gibbs, Kent, Talman, Chippendale, Chambers, J. Wyatt, Adams, Bacon, Soane, Gandy, Jeffery, Wyatt, Flaxman, Stothard, Holland, Bridgins, Pitt (sculptor), Tatham, B. Wyatt, Pugin, Barry, &c., would offer the loan of them for exhibition during the time the International Exhibition is open.

* See page 147, ante.



ST. STEPHEN'S CHURCH, SPITALFIELDS.—MR. E. CHRISTIAN, ARCHITECT.



DESCRIPTION OF THE CENTRE PIER OF THE BRIDGE ACROSS THE RIVER TAMAR, AT SALTASH, ON THE CORNWALL RAILWAY.*

THIS communication embraced, in a narrative form, a detailed account of the preliminaries connected with the Albert-bridge, which crossed the river Tamar where it was only 1,100 feet wide, with precipitous banks and a depth of water to the surface of the mud of 70 feet. A dyke of green stone trap intersected the clay slate formation at this point, and cropped out to the surface above the water on the western bank of the river. It was ascertained, by borings made in the bed of the river, that rock extended from the eastern side to beyond the middle of the stream, covered with mud or silt to a depth of from 3 feet to 16 feet. Subsequently, a thorough examination of the bed of the river where a centre pier would probably be built, by means of one hundred and seventy-five borings made within a cylinder at thirty-five different places, over an area of 50 feet square, enabled an exact model of the surface of the rock to be prepared, showing the irregularities and fissures that might be expected. Eventually it was decided, from the information thus obtained, to erect one pier only in the deep water, instead of three, as would have been necessary for the spans required by the Admiralty; and when it was determined to proceed with the construction of the bridge, in 1852, it was decided that there should be two spans of 455 feet, two of 93 feet, two of 83 feet 6 inches, two of 78 feet, two of 72 feet 6 inches, and nine of 69 feet 6 inches; the total length, including the adjoining land openings, being 2,200 feet.

The centre, or deep water pier, intended to carry the weight of one-half of each of the two main spans, consisted of a column, or circular pillar, of solid masonry, 35 feet diameter and 90 feet high, carried up from the rock foundation to above high-water mark. Upon this were placed four octagonal columns of cast iron, 10 feet diameter, carried up to the level of the roadway, which was 100 feet above high-water mark. Upon the tops of the columns, cast-iron standards were fixed to receive the ends of the tubes and chains which constituted the trusses of the bridge. The weight at the bottom of the masonry foundation was about 9½ tons per square foot, increased, when the bridge was loaded by passing trains, to about 10 tons per square foot.

In the construction of the masonry pier, a wrought-iron cylinder, of boiler plates, 37 feet diameter and 90 feet in length, and open at the top and the bottom, was sunk through the mud of the bed of the river to the rock. The water was then pumped out, and the mud excavated; the masonry being built up inside, and the cylinder above the ground afterwards removed. It was expected that, by forming a bank round the cylinder after being sunk to the rock, sufficient watertightness would be insured for getting in the masonry. To provide, however, for the contingency of excessive leakage, the cylinder was so constructed as to admit of the application of air-pressure. As the surface of the rock, although very irregular and ragged, had a general dip to the south-west, the bottom of the cylinder was formed with a corresponding bevel, one side being 6 feet longer than the other. A dome, or lower deck, was constructed inside, at the level of the mud, and an internal cylinder, 10 feet in diameter, open at the top and the bottom, connected the lower with the upper deck of the cylinder. The 6 feet cylinder, previously used for the borings, was fixed eccentrically inside the other, and an air-jacket or gallery, making an inner skin round the bottom edge below the dome, was formed, about 4 feet in width, divided into eleven compartments, and connected with the bottom of the 6 feet cylinder by an air passage below the dome.

Details were then given of the construction of the larger cylinder, and of the mode of launching and floating it to its position. When accurately adjusted over the intended site, water was gradually let in, until the cylinder penetrated through the mud about 13 feet, and rested on some irregularities upon the rock, which caused it to heel over towards the east about 7 feet 6 inches. By letting water in upon the dome or lower deck, and loading the higher side with iron ballast, the cylinder forced its way through the obstructions at the bottom edge, and took a nearly vertical position. The air and water pumps were then set to work, and the greater part of the mud and oyster shells, which filled the compartments of the air-jacket at the bottom, was cleared out, and the irregular surface of the rock excavated; the bottom of the cylinder being now 82 feet below high-water. Subsequently, a leak having broken out through a fissure in the rock on the north-east, or higher edge, considerable difficulty was experienced in maintaining sufficient pressure with the air-pumps to keep the water down and the bottom dry. The leak was at length reduced, by driving close sheet piling into the fissure. When at its full depth, the cylinder was 87 feet 6 inches below high-water at the lowest place, and then a hemp gasket was worked under the edge of the cylinder, all round the outside, to assist its watertightness. A ring of granite ashlar, 4 feet in width and about 7 feet in height, was then built in the air-jacket; and a bank of clay and sand was deposited round the outside of the cylinder to compress the mud. When the water was pumped out of the body of the water below the dome, and the excavation of the mud was being proceeded with, a leak broke out, and the water overpowered the pumps. Additional engines and pumps were provided, and efforts were made to diminish the leakage with varying success; but as it required four pumps to keep the water down to 54 feet, recourse to air pressure in the body of the cylinder below the dome became imminent, and preparations for its application were made. To provide against the buoyancy, or upward pressure against the dome and cover, the 37 feet cylinder was loaded with 750 tons of ballast, in addition to its own weight of 290 tons. The pumps were then got into good order, and, by continual pumping, succeeded in keeping the water down. The mud was excavated, the cylinder below the dome securely shored across, and the rock levelled, when the masonry, in thin courses of granite ashlar in cement, in the body of the cylinder was commenced. As soon as the masonry reached the level of the air-jacket ring it was thoroughly bonded, the plates of the air-jacket being cut out as it proceeded. Upon the top of the bonding course, two courses of hard brickwork in cement were laid, making a perfectly watertight floor over the whole diameter of the column. Meanwhile the masonry of the air-jacket, where the leak occurred, was taken down, and the leak was diminished by additional sheet piling. The leak was discovered to have broken out at the same fissure as before, and had torn away the rock underneath the masonry of the air-jacket and bottom edge of the cylinder, but the masonry itself was undisturbed.

The next operation was to draw off the water above the dome and remove the ballast, to allow the masonry to be proceeded with, which it eventually did at the rate of from 5 feet to 7 feet in height per week. When it was 45 feet in height the influx of water was entirely stopped. After the masonry had been completed to the level of the plinth the upper part of the cylinder was unbolted at the separate joints and floated to the shore.

DECISIONS IN THE COURTS.

NEW LIGHTS IN REBUILT HOUSES.

Hutchinson v. Copstake.—Exchequer Chambers.—This was error by the plaintiffs to reverse a judgment of the Court of Common Pleas in favour of the defendants. At the trial a verdict was found for the defendants, subject to a special case, on which, on argument, the Court below gave judgment for the defendants. The declaration alleged the plaintiffs to be possessed of a certain shop and warehouse, in which there were of right, &c., divers windows through which light and air ought to pass, and that the defendants had built and continued a wall near to the said windows, whereby the light and air were hindered, &c. At the trial a verdict was taken for the defendants, subject to a special case, from which it appeared that the premises of the plaintiffs and the defendants respectively were situate on opposite sides of Broad-street, London, and facing one another, and that the plaintiffs' premises had been burnt down and rebuilt, and that the windows in them previous to the fire had been used for more than twenty years. It appeared, also, that the windows in the newly-erected building of the plaintiffs were placed in different positions and were of different sizes, and, upon the whole, occupied more space in the wall than the windows of their premises as they stood before the fire. Parts of some of the new windows were identical with parts of the old ones, but to a considerable extent the old and new windows did not coincide in dimensions. The case stated that the defendants could not have obstructed the passage of light to such portions of the windows of the plaintiffs' present warehouse as are new without at the same time obstructing the passage of light to such portions of the plaintiffs' windows as are in the sites of the old windows, to the extent stated in the declaration. The plaintiffs had besides broken some entirely new windows in the attics of their new premises. The obstruction complained of by the plaintiffs was that the defendants had raised their premises 37 feet higher than before, which darkened their windows, &c.

The judgments of the Court were as follows:—

Judge Crompton: On the argument before us the defendants contended that the new windows were not substantially the same as the old ones, and that as it was found the case that the new portions of the windows could not be obstructed without obstructing the portions in the sites of the old windows, the case fell within the authority of *Renshaw v. Bean*. The plaintiffs, on the contrary, contended that the new lights were substantially the same as the old ones; that the same amount of light and air ought to have come to their building, by whatsoever apertures they chose to receive it; that no more burthen was cast on the servient tenement by the one set of windows than by the other; and that even if the windows were substantially different, or increased in size, still the defendants had no right to obstruct the portions of the old lights that formed parts of the new windows; and they impugned the authority of *Renshaw v. Bean*. On comparing the tracings of the old and new buildings, and looking at the statements in the case, the old and new windows of the plaintiffs do not seem to us to be substantially the same; and I think that where, as in the present case, windows, to which a right has been acquired, are so far altered in their position and size, and confused with portions of new windows, that the owner of the servient tenement cannot prevent a right being gained to the new windows without obstructing such portions of the old windows as have been mixed up with the new lights, no right of action arises from such necessary obstruction of the remaining portions of the old windows. When the origin of the right to windows is considered, it seems to be clear, according to the judgment of Judge Patteson, in *Blanchard v. Bridges*, in which I entirely concur, that lights, in respect of which the right of action is sought to be enforced, must be substantially the same as the lights which have been gained by user or grant, and that no new light can be substituted without the consent of the owner of the servient tenement. The right to prevent the owner of the servient tenement from using his own land as he chooses must arise from the consent of such owner or his predecessors, and that consent must, as observed by Judge Patteson, have reference to the state of things at the time when it was supposed to have taken place, and cannot fairly be extended beyond the access of light and air through the same aperture, or one of the same dimensions, and in the same position. Since the Prescription Act, 2 and 3 Will. IV. c. 71, the right to light depends upon positive enactments, in cases falling within the provisions of that statute. By the 3rd section of the Act, "when the access and use of light to and for any dwelling-house, &c., shall have been actually enjoyed therewith for the full period of twenty years without interruption, the right thereto shall be deemed absolute and indefeasible." The extent of the right must be confined to that which has been actually enjoyed, and which the owner of the adjoining land did not interrupt, so that precisely the same reasons apply as did at common law. The doctrine so well explained by the above learned judge does not seem to me at all at variance, as was suggested by Mr. Smith in his argument, with the observations of Lord Chief Justice Campbell, in *Renshaw v. Bean*, where he says, "We by no means say that where the owner of a house alters the dimensions of an ancient window in it, he may in no case maintain an action for that which is an obstruction to it in its former state." This observation would be applicable, exempli gratia, to a case where an ancient window of 3 feet had an addition in height or breadth of 3 feet, which could be obstructed by a board or scaffolding, and where the old light being distinguishable, need not be interfered with in blocking up the new; and I perfectly agree in Lord Campbell's observations as applicable to such a case. In the present case the matter in respect of which the action is brought is not the thing granted, or to which a right has been acquired by user. It is not the thing in respect of which the owners of the servient tenement have become subject to a restriction that they should not obstruct, by doing any act on their own land which their pleasure or caprice may lead them to choose to do. We were pressed with the argument, that there was no greater amount of inconvenience to the servient tenement; and a case was cited where the Master of the Rolls was supposed to have held, that a party, having several windows in a house, could put out an intermediate new window between two old ones, where no apparent detriment to the owner of the servient tenement appeared to arise therefrom. I wholly dissent from this doctrine. I think that the right to restrict the owner of the adjoining land from building on his own land, gained by user or grant, must be confined to the subject-matter of such user or grant, and that the restriction on the owner of the servient tenement must be substantially the same, according to the rule as laid down in *Blanchard v. Bridges*. I do not think that the owner of the old lights can say, "that this new window I now put out will occasion you no harm, as you could not build so as to affect any of my new lights before, and this new one will not abridge your power of building." The new light is not one of the windows to which the original assent was given, and it may be that the owner of the servient tenement would not have chosen to acquiesce if the window had been in the situation of the new window. Suppose that a party has a back wall of his house with no windows, or very few windows, opposite to the front of his neighbour's house, the neighbour may very likely not object to a single window, which may not annoy him by being opposite to particular parts of his own house; he may be good-natured enough not to object to two such windows, and may allow a right to be gained to them; whereas an intermediate window might have made all the difference, and might have prevented him from at all acquiescing in any lights. On the other doctrine, an acquiescence in one unimportant light, which gave no annoyance, might be made to operate so as to give a right to lights which might be a great annoyance and interference with the privacy of the servient tenement, and in which the owner of the servient tenement never would have acquiesced. Can it be the law that a man who has one window in the back of his house can say to his neighbour, "My window is so situate, that any increase in your house would interfere with some rays of light, and therefore I have a right to fill the back of my house with windows, which you must not interfere with?" I think that the true doctrine is, to confine the right to what this use

* Read before the Institute of Civil Engineers by Mr. R. P. BREBETON, M. Inst. C.E.

* This case is fully reported in the *Jurist* for January 25th.

points out. We do not, however, say that a right to have any quantity of lights that a person could put in his house might not exist as against his neighbour. Such a right might be created by grant, and might probably be presumed from very peculiar circumstances, as if the owner of the dominant tenement for a long course of years had continued to change his lights from time to time, and such changes had been acquiesced in from time to time for long periods; but in general the right must, I think, correspond with the user of the particular light or lights. We are much pressed with the supposed hardship of the case; but I think where a party has to rebuild his house, he should take care that he places the windows in their old situations, and makes them the same size, and before he substitutes or adds lights substantially different in size or position, he should make a bargain with his neighbour; and we think the hardship would be greater the other way, if the servient tenement could be made subject to a different set of lights than those to which the owner had assented, and which new lights might be such as he would have dissented from if originally proposed, and which might affect the privacy of different parts of his tenement. It was also asked, what would be the case if there were two adjoining buildings, and the owner of one of them should substantially alter the lights, so that the owner of the servient tenement opposite to the both of them could not block up the new lights without blocking up the old lights, in respect adjoining neighbour? To this we answer that, in the first place, would be the same identical obstruction of which an action would or might be brought, would be the same identical unchanged lights; and, in the second place, that the owner, complaining of the blocking up of his ancient lights, would not, by his own act, have put the owner of the servient tenement into the situation of not being able to block up the new lights without blocking up the old; so that the very reason on which the case of *Renshaw v. Bean* was decided would not be applicable. As I think that the new and old lights in the present case are not substantially the same, and that the old lights are, by the act of the plaintiffs, so confused and mixed up with the new lights that the latter cannot be blocked up without obstructing the former, and, therefore, that according to the principle I have referred to, this action cannot be supported, I am of opinion that the judgment of the Court below should be affirmed.

Judge Blackburn: My Brother Hill concurs in the above judgment of my Brother Crompton. My Brother Channell and I concur in the judgment of my Brother Crompton, but are desirous of adding for ourselves, that in the present case, in our opinion, no question arises as to the right of the owner of adjacent land to use it, so as to block up an ancient unaltered window, on the ground that the person who has a right to that window has also opened a new one in such a position that the owner of the adjacent land must either block up the ancient window, or submit to the enjoyment, without interruption, of the new window, so as, after twenty years, to make the right to the new window indefeasible. We consider that a very different question, on which, if it were raised by the facts, we should be bound to deliver an opinion; as it is, without doing so, we rest our concurrence in affirming the judgment on the ground that, on comparing the tracings which are part of the case, we find that no one of the plaintiffs' present windows substantially corresponds with an ancient window; and we draw the inference of fact, that no one of the present lights claimed is a continuation of one of the ancient lights. We perfectly concur in the reasoning of my Brother Crompton, by which he shows that the new and the old windows may occupy, in fact, the same space, without the right to light claimed through the new window being the same light as that enjoyed for twenty years, without interruption, through the old one.

Baron Bramwell: I concur in this judgment solely on the ground that no one of the existing windows occupies the same position as any one of the ancient windows did, and consequently that by no one of them have light and air been enjoyed for twenty years, and so no right has been acquired in respect of any of them against the defendants.—Judgment affirmed.

PROGRESS OF THE METROPOLITAN MAIN DRAINAGE WORKS.

AT the last meeting of the Metropolitan Board of Works, held at the Offices, Spring-gardens, on Friday, Mr. BAZALGETTE, Engineer-in-Chief of the Board, reported that Mr. Furness had made considerable progress with the Northern Outfall Sewer contract during the past month. The iron superstructures for the aqueducts over the river Lee and the Bow and Barking railway are in course of erection, and the ironwork for these and three other bridges was delivered on the ground. The tunnelling under the Eastern Counties railway embankment progresses slowly, but with safety to the traffic on the line, and the brick piers for permanently supporting the railway are now being built. The Stratford-road works had made fair progress since the last monthly report. A large addition has been made to the concrete embankments, and the brickwork of the sewers between the river Lee and East Ham church. From thence to the outlet at Barking Creek 120 of the arches forming the foundation of the permanent works across the marshes are completed, and the total value of the work executed up to the present time is about £210,000. On the Middle-level Sewer Messrs. Brassey and Co. have completed about 23,000 feet of brick sewer, varying from 4 feet by 6 feet to 12 feet by 9 feet, at an outlay of about £101,500. The rivers, overflows, and connections at the junction of the Ranelagh Storm Overflow with the Middle-level Sewer in the Uxbridge-road progress slowly, owing to the character of the work and from the confined space within which it has to be executed. Active measures have been taken for the removal of the surplus materials from Kensington-gardens, and for reinstating the surface, and these works have been nearly brought to a close. The total value of the work done is about £28,000. On the Southern High-level Sewer works Messrs. Lee and Bowles have completed about 7½ miles of sewer, at an estimated cost of about £149,000, and the extension of this sewer, under Mr. Pearson's contract, has commenced, and the work executed is valued at about £634. Mr. Webster has constructed about 6½ miles of the Southern Outfall Sewer with some heavy and difficult works thereon, at an estimated cost of about £276,000, and he will shortly complete this contract. At Deptford Pumping Station Messrs. Aird and Son have completed the brickwork of both engine-houses up to the level of Trinity High-water. The chimney-shaft foundations are in, and those of the boiler-house are in progress. 550 feet of double line of the Low-level Sewer are completed, and 3,650 feet of the iron pipes forming a connection with the High-level Sewer have been laid under Deptford Creek. 208 feet of sewer, 11 feet 6 inches in diameter, have been constructed to form a connection between the Pumping Station and the Outfall Sewer. The coal-sheds and dwelling-houses are nearly finished, and 170 feet of the wharf wall constructed. The Low-level Sewer is carried half way under Deptford Creek, and the cofferdam for the second half has been commenced. The value of the work done under this contract is £63,000.

THE INSTITUTE PRIZES.—We are asked to say that the design for a villa marked "Humber," the letter accompanying which was not opened at the meeting of the 3rd inst. in consequence of a mistake which the author has explained, is by Mr. Robert Clamp, of Windsor-street, Hull.

THE FINE ARTS IN SCOTLAND.—The Royal Association for Promotion of the Fine Arts in Scotland last year received subscriptions amounting to the sum of £5,185. Of this sum upwards of £2,000 have been expended in the purchase of fifty-five works of art. A large sum has also been expended in the preparation of the plates which are periodically distributed amongst the members.

THE ARCHITECTURAL MUSEUM.—DISTRIBUTION OF PRIZES.

THE opening meeting of the session of the Architectural Museum and distribution of prizes took place in the theatre of the South Kensington Museum on Tuesday evening, when there was a numerous attendance of the friends of the institution. The chair was occupied by the President, A. J. B. BENESFORD-HOPE, Esq., and amongst the gentlemen present were Mr. G. Gilbert Scott, Mr. Joseph Clarke, Mr. S. C. Hall, Mr. M. J. Lomax, Professor Partridge, Mr. A. W. Blomfield, Mr. C. F. Hayward, Mr. W. C. Cocks, Mr. C. W. Cooke, Mr. S. Ferrey, Mr. Hakewill, Mr. Trevor Crispin, Mr. Pearson, Mr. Slater, Rev. Temple Frere, Mr. Knight Watson, the Rev. William Scott, &c. Letters of apology for non-attendance were received from, amongst other gentlemen, the Duke of Buccleuch, Earl of Powis, Earl de Grey, Bishop of Oxford, Sir Walter James, Bart., Sir Gardner Wilkinson, Mr. Cole, and Professor Donaldson.

The CHAIRMAN said they were assembled that evening as often heretofore for the purpose of carrying out what was the main and principal intention of that their Museum—distributing the annual prizes to those who had gone into and been successful in their competition. Though that was the main object of their institution, it was not the only one, as he should hope, in the few words which, with their kindness, he proposed to address to them, to prove. But before going into any details of the administration of the last year, there was one topic which he was sure must rise spontaneous to the mind of every one who loved and cared for the fine arts in this realm—must rise with a more particular significance with those of the Architectural Museum, and which must be accompanied with feelings of regret at the sudden and irreparable loss that fell on this land in last December. They all of them knew how devoted the Prince Consort was to everything that was calculated to conduce to the happiness of that country which he made and which made him his own. They knew the Prince was great because he never aped greatness; they knew he was popular because he never thought of popularity all his life; and the people knew not how they cared for him until he was lost. As a patron of art, in more than any other aspect, the Prince came before the public with credit and renown. They now knew, however, that not only by his patronage did he promote the fine arts, but that he did it also by the exercise of that influence which could be legitimately carried out, and which, though still without ostentation, was never wanting in the matter of the promotion of art, or in the matter of furthering all good art objects. And so the late Prince a few years ago most kindly and most generously accepted the office of patron of that their Architectural Museum. So that by his demise they were officially deprived of their head, their chief officer, as well as being sharers in the great national grief. So, he said, they could not that night enter upon the business of the evening without first paying that tribute of regret which all Englishmen and all Englishwomen must pay to the tomb of the Prince and the throne of the Queen—(Applause.) Officially they had done so already; officially their address of condolence had been drawn up; and though they knew no single address of condolence could materially affect the august occupant of the throne, yet the accumulation of that great tide of grief from every class, from every rank, from all denominations, from every sphere of life—it was that great tide of grief, flowing up silently and quietly, which must testify what was the loyalty of the land, and must be, in her darkest hour of sorrow and grief, a source of solace to our Queen—(Hear, hear.) Having discharged what seemed to him a becoming duty, he would proceed to the more immediate business of the meeting. The Architectural Museum had for the last two years been in a transitional state. Those who took an interest in the Museum would remember that the work for which they were directly established shaped itself into three classes—first, the accumulation of articles forming an architectural museum as perfect as possible, chiefly Mediæval, but not so exclusively; secondly, the delivering of architectural lectures; and then, thirdly, the teaching and encouraging of art-workmen by offering prizes. Those three distinct, but at the same time congruous and harmonious objects, were what the Architectural Museum existed for. With regard to the first of those objects, the collection of a museum of architecture, they knew full well they were first in the field; they knew full well that when every one doubted, shrunk, did not or would not understand the matter, the promoters of the Museum came forward and established it. They made a collection, of course at first not very systematic; they were beholden to friends, and of course it was not for them to be particular at first. So they collected, and, as time went on and they got more articles, they became more fastidious, and their friends became more careful in what they gave to the Museum. And ultimately they should have thought of refusing, and their friends would have hesitated before giving them, anything that did not stand high in the order of merit. This Museum, however, had limits, but a man's ambition had no limits. Accordingly the question space came on, and with it the question of disputed jurisdiction, but no one had a right to be ashamed of anything that took place. The question arose between the directors of the Museum and the custodiers of the building in which they were assembled, and thus had arisen difficulties. Matters came to that state when negotiation and arrangement became necessary. Those negotiations and arrangements were still being prosecuted, and not yet consummated. It was one proposal in their negotiations that that portion of their collection down there should be handed over alone to the authorities of the South Kensington Museum, but the ownership of the Architectural Museum was to be asserted, and it was also provided that their collection should form a portion of a future collection of architecture. And it was also provided, in terms quite sufficient to be perfectly stringent on gentlemen acting together for the attainment of a common object, that the opinion of the directors of the Architectural Museum should not be rejected—he did not say it was in writing—but it was understood that the opinion of the directors of the Museum should have weight with the authorities of the South Kensington Museum in the purchase of future portions for collection. In agreeing to these terms, of course the directors of the Architectural Museum sacrificed something of personal feeling. He would not have them believe, as little would he have the authorities of the South Kensington Museum believe, indeed, no one supposed, and no one could suppose, it would not have been more pleasant and more agreeable to them to have had, as heretofore, the collection and arrangement of a national museum of architecture—(Hear, hear.) But there were certain reasons, a few courtesies, certain etiquettes and arrangements, incident to a large department, which rendered it impossible for the Architectural Museum to be an *Imperium in Imperio*—to be a separate establishment in the South Kensington Museum; and still they had not the means of setting up their own Museum in another and distinct department. In short, the whole thing was, in the broad sense of the term, a negotiation and a compromise. They entered into it cheerfully, and he hoped and trusted the

manner in which they entered into it would, with the other side, keep things going in a proper manner. Still, at the same time, they could not but regret giving up that independent position they held while tenants of the premises in Cannon-row—(Hear, hear.) But if hereafter a great architectural museum should rise up, and if it did go on to form a school of architects, and artists, and artist workmen, then he said that all those who wished the rise and progress of this museum of theirs would be beholden to say that the Architectural Museum, late of Cannon-row, held the same position towards the South Kensington Museum as the collection of Sir Hans Sloane held in the British Museum, for without it, probably, there would have been no British Museum, and but for the exertions of Mr. Scott, of Mr. Clarke, Mr. Clutton, and other gentlemen, some years ago, this great collection of architectural casts would not have been in existence.—(Hear, hear.) So much for the state of the Architectural Museum. The negotiations with the Government were still under consideration, they were still hung up; in fact, nothing had been done—(hear, hear)—and so they stood, as before, at the present. The Government was rebuilding the building in which they were met, and everything was in a mess, in short—(A laugh.) He hoped they would be able to find room for the Indian collection, sent to the Architectural Museum by a kind and excellent friend in Bombay, Sir Bartle Frere, and which was still in packing-cases. The second branch of the subject was the delivery of lectures at the Museum. He might remark, however, in passing, that if the Government undertook to buy the future architectural collections, and if the thing worked well, as they hoped and trusted it would, it would free more money for other operations that existed, as lectures and prizes for art-workmen. As to lectures, it had been doubted whether the lectures helped on the accumulation of their casts, whether art-people were the people that came to them, and whether it was not people in easy circumstances who, to a great extent, attended the lectures, and not art-workmen. It might be admitted, that, to a large extent, such had been the case, but he would go on and say, what then? When they had a society like this, using various measures of utility for good, was it necessary that all should hang on each other? Could not a railway company start two lines for two places without having a loop; could it not have a line north and one south as well? He thought it could. Their collection was one thing, the lectures were another, and the prizes offered to art-workmen were a third. While the directors appealed to their special friends—the art-workmen—to come to the lectures and listen to them, they did not intend to prepare those lectures exclusively for that class. Architecture was an art which opened fields of observation for many, who made it a very useful and profitable study, and who derived much instruction and amusement in listening to the interesting details of the studies of other people. There was no course of popular lectures on architecture given in London. The lectures given at the Royal Academy were intended for the benefit of students, and the Architectural Museum had set up their lectures simply as a course of architectural lectures. Since then the Architectural Exhibition, at the galleries in Conduit-street, had started architectural lectures. What was the result? Their lecture-room was filled, and the Exhibition galleries filled on the lecture nights. Both sets of lectures at the present time took, and attracted full audiences. Now, just look at the list of lectures the Architectural Museum had for the present session. There was first a lecture, by Mr. E. A. Freeman, "On the difference between Minster and Parish Churches," and that gentleman was better qualified than most men to handle such a subject. Lord Alwyne Compton was to deliver a lecture "On Encaustic Tiles and Tile Pavements," and that nobleman knew more about encaustic tiles, perhaps, than any other man they knew. The above were two square men standing on square subjects for lectures. Then there was to be a lecture "On Jerusalem," by Dr. Pierotti, who had studied at the Holy City, and would be able to give much useful information gathered on the spot. He would be accompanied by an interpreter, Mr. George Williams, as the Doctor could not speak a word of English. The next lecture would be by Mr. William Burges, "On Colour," and they all knew how able that gentleman was on the subject of colour, and from him might be expected a very able and learned discourse. Then followed Mr. George Williams, in a lecture "On Georgia and Armenia," countries which had not been much visited by architects. The next lecturer of the session would be Mr. G. Gilbert Scott, "On the formation of a National Museum of Architecture, as viewed especially in its connection with the Mediaeval styles." Mr. Scott was the founder of the Architectural Museum, one who had thought more soundly on this subject than any other man, and his lecture might be expected to be a *ministerium pronunciamiento*.—(Applause.) Then the lecture of Mr. Thomas James was to follow, "On Labourers' Cottages," and much might be expected of it. Well, then he came to the third branch of the work of the Institution, namely, prizes. Their Museum was instituted for the study of minute details of architecture. Though an advocate for large cathedrals instead of small churches; though an advocate for bigness pure and unadulterated, bigness and nothing but bigness—(a laugh)—while he stood up for bigness he was not blind to the fact that there was something else that might not be despised, and that was grace, proportion and beauty in detail—(hear, hear)—for anything like proportion in art surely embraced both bigness and details of architecture. This Museum, instead of insisting on bigness, followed out the study of details, even the smallest matter on which man's handwork was apparent. And here he should point out what it was important to know—that they did not exist to make architects or artists. They did not expect, and did not want, to make a single artist; artists were made at the Royal Academy. What they wanted to make at their Museum, or through its instrumentality, was art-workmen, or rather to make workmen work in an artistic and proper manner. This year, particularly, they were bound to unfurl that standard, and to proclaim, loud and long and deep, that that was their object—(Hear.) This year the great Exhibition was to be opened, and whatever objections might be entertained to the building itself, that should give rise to no prejudice as to the contents of that building. As to those who should look at the working of that Exhibition, the great matter that would strike an observer would be the manner in which the whole of the Exhibition displayed itself; how completely the whole arrangements of that Museum showed the utter impossibility of distinguishing where art ended and manufactures began, or where manufactures ended and art began. The extraordinary interpenetration in every hole and corner of the Exhibition would be astonishing. That was true and philosophical. Every handwork of man, such as a steam-engine, a carriage, a patent mangle, or a wringing machine, every handwork of man was, so far as form was concerned, a work of art. On the other hand, the Venuses, the Apollos, and Madonnas, the works of Raffaele and other great painters, produced by the hands of man, were still works of art.

Arts and manufactures ran so close together that it was difficult to draw a distinction between them. There were some things in which manufacture was close to art, such as the steam-engine and wringing machine, but still it was not to be called art, while as to great pictures, so full of the ideal, no one could call them anything but works of art. But between them lay the great border states, which might belong neither to art nor to manufacture. That was the ground they wished to make their own, and on which their Museum wished to distinguish itself. By standing up there as an advocate of manufacture, he felt he had a right to do so, not personal but hereditary. He could not but remember that it was his father—in spite of the jokes of Sydney Smith—that his father was the man who, fifty years ago, first stood up to say that all objects of commerce might be said to have rules of beauty as well as works of art. And long before the Architectural Museum was founded, the good seed sown by Thomas Hope brought up an abundant harvest. But, till this Museum was founded, nothing had been done except to found designers, or create designs by a superior being. The Architectural Museum did not go in to educate designers from above, or to create a school of designers. They went in to rule the quality of those men who had to carry the designs out—they went in to teach the workmen, with their hands trained and their minds disciplined, to understand what they were doing, and to carry out their work with love and freedom. The system of creating designs was good and right; if it had not come in their work would have been impossible. But the functions of the Architectural Museum were not those of a school of design; they competed with no school of design, but they were a college where the workman might understand the craft, the secret, the *arcana*, and work out a design in the spirit of the designer. Then, they were told that they were only the Architectural Museum. What was the meaning of architecture? He should like anyone in that room to stand up and say where the limit between architecture and any other art was passed. The distinction between architecture and art was one of those things which it was utterly impossible to grapple with. Was not metal-work architectural in everything except fire-arms and knives and forks? Take again wood-work, such as a table, a chair, a sofa, or a bureau. They might be driven to say all art was architectural except pictures, but when pictures were painted for a particular building it would be found they were made for a particular locality, and thus became architectural. It was gratifying to find the way in which this Architectural Museum of theirs had gone ahead in taking up minute details without much association or much exertion, and that they were working as an art museum instead of an architectural museum. He had no doubt that different gentlemen in that room—friends of the Architectural Museum—would exhibit specimens in different classes at the forthcoming Exhibition. No power of philosophical reasoning could show why the men showing specimens at the Exhibition appeared in different classes; any power of classification was a mere matter of private book arrangement. For example, as far as those who had been able to judge of what the coming Exhibition would be, there would be more than one court and more than one department in which there would be a peculiar exhibition of the connection between art and architecture amongst gentlemen who carried out the views they had all broadly enunciated in that room. There were two courts in two different classes that were both exemplifications of the broad principle on which the Architectural Museum was first started, and in one of which there would be space reserved for this Museum, in which the more meritorious prize-works exhibited that evening were to be displayed. This rather roundabout journey brought him to the specific and proper object of their gathering that evening, which was—first, to give prizes to those who had earned them, and, in the second place, to listen to those remarks which might be made, prompted by the occasion, short, and to the purpose, by friends of the Institution present, who never allowed such occasions to go past without giving expression to the results of their mature, candid, and friendly experience. Last year the Institution started with the giving of a larger amount of prizes than they had done before. Now, from not purchasing specimens they had more money to sport on prizes, and the directors thought they should act wisely in doing so, both for the advancement of the prizemen and for the credit of the Institution, seeing that the Exhibition was to take place this year, on a gigantic scale, for the very objects they had in view. And the directors acted upon this principle—of not giving prizes when a certain scale of merit was not obtained, but still without looking for an extraordinary amount of merit—(Hear, hear.) The prizes were for young aspirants, not for those who had long held the spurs and occupied the most honourable seats. What they wanted was art of comparative moderate excellence for prizes. This year, when they had more competitors than usual, the question of the line to draw was to the judges a matter of anxiety. When he was a boy at school and wrote for prizes, he used to think it was an easy matter for the judges to decide upon the essays, and that it was a difficult thing for the boys to write for the prizes. But now he thought the judges of contributions had as much difficulty and anxiety, or more so, than the competitors themselves. They started last year with more money in their pockets than previously, and other friends came forward to assist them, amongst whom were Mr. S. C. Hall, with his magnificent donation of books, and Sir Francis Scott, who gave a prize of a very large amount; but that prize was offered in a class in which the merit of the works sent in was not such as to justify them in awarding a prize. The Ecclesiological Society also gave prizes. The ironwork in the first class did not receive any prize, nor was the prize awarded for painted glass; and in the miscellaneous class of prizes the regular prize was not given, though to two competitors prizes had been awarded. There had this year been sent, in competition for prizes, a much better lot of specimens than on any previous year, especially in wood carving. The Chairman then proceeded to deliver the prizes to the successful competitors, making, as he proceeded, comments upon the productions of each. The following is a list of the successful competitors:—

PRIZES FOR STONE CARVING.

The Council of the Architectural Museum offered two prizes of £10 10s. and £5 5s. as first and second premiums to the competitors who should most successfully design and execute in high relief a carved stone panel, 2 feet by 2 feet (outside measurement), representing Queen Eleanor watching over Edward I. when wounded. Seven specimens received.

Prizes Awarded.

Prize 1.—£10 10s., and a certificate, to Mr. Samuel Ruddock, of 22, Bloomfield-terrace, Pimlico.

Prize 2.—£5 5s., and a certificate, to Mr. E. W. Thornhill, at Messrs. Hardman's, Dublin.

Extra Prize.—£1 1s., Mr. John Gould, 1, Union-terrace, High-street, Camden-town.

SECOND STONE CARVING COMPETITION.

The Council also offer two prizes of £5 5s. and £3 3s. as first and second premiums to the competitors who should most successfully design and execute a carved and moulded stone capital, suitable for a column 9 inches in diameter, showing the best arrangement of

hawthorn and ash foliage, which may be conventionally rendered. Eleven specimens received (one not within conditions of competition but to which an extra prize was awarded under the head of sundry specimens).

Prizes Awarded.

Prize 1.—£5 5s., and a certificate, to Mr. James Allen, 109, Lillington-street, Pimlico.
Prize 2.—£3 3s., and a certificate, to Mr. John Daly, 26, Wilson-street, Westminster.

PRIZES FOR MODELLING IN CLAY.

The Council of the Architectural Museum offered two prizes of £3 3s. and £2 2s. as first and second premiums to the competitors who should most successfully execute in the Architectural Museum a model from a cast representing one of the "angelic choir" from the north transept of Westminster Abbey. No specimens received.

PRIZES FOR WOOD CARVING.

The Council of the Architectural Museum offered two prizes of £10 10s. and £5 5s. as first and second premiums to the competitors who should most successfully design and execute in lime or other soft wood a door panel, with pierced tracery and foliage, of not less than 2 feet by 1 foot 4 inches in extent. Thirteen specimens received (one specimen not within conditions of competition, but an extra prize awarded to it under the head of sundry specimens).

Prizes Awarded.

Prize 1.—£10 10s., and a certificate, to Mr. Henry Reynolds, 22A, Storey-street, Caledonian-road.

Prize 2.—£5 5s., and a certificate, to Mr. C. J. Herley, 2, Camden-place, South-street, Taunton.

Extra Prize.—£1 1s., and a book, to Mr. H. J. Wicks, 76, Coleshill-street, Eaton-square.

Extra Prize.—A book, to Mr. John Seymour, of Tower-lane, Taunton. (An extra prize for wood carving was awarded to this competitor last year.)

Extra Prize.—A book, to Mr. Alfred Angus, 12, Belvoir-terrace, Vauxhall-bridge-road.

PRIZES FOR METAL WORK.

The Council of the Architectural Museum offered two prizes of £10 10s. and £6 6s. as first and second premiums for the competitors who should most successfully execute in hammered from a copy of a portion of the scroll-work (about 2 feet 6 inches high by 2 feet broad) in St. Paul's Cathedral. No specimens received for this competition.

SECOND IRONWORK COMPETITION.

The Council of the Architectural Museum also offered a prize of £10 10s., and Sir Francis Scott, Bart., a prize of £5 5s., as first and second premiums, for the competitors who should most successfully design and execute a wrought-iron door-handle, either Gothic or Renaissance in style, and not less than 6 inches over. The ornamental workmanship of any specimen must not interfere with its convenient use. Three specimens received, but no prizes awarded, the specimens not being thought worthy.

PRIZE FOR PAINTED GLASS.

The Council of the Architectural Museum offered a prize of £5 5s. for the competitor who should most successfully design and execute a glass roundel or disc 9 inches in diameter, painted with any floriated design which the artist-workman might prefer. Five specimens received, also a design, but no prizes awarded.

PRIZES FOR COLOURED DECORATION.

The Committee of the Ecclesiological Society offered, through the Council of the Architectural Museum, a prize of £5 5s. for the competitor who should most successfully colour, according to his own judgment, a cast of one of the "angelic choir" in the north transept of Westminster Abbey. Twenty-two specimens received.

Prizes Awarded.

Prize 1.—£5 5s., and a certificate, to Mr. Joseph Peepole Wood, 25, Brown-street, Bryanston-square.

Prize 2.—Increased from £3 3s. to £4 4s., and a certificate, to Mr. A. O. P. Harrison, 337, Euston-road. (A prizeman on two or three occasions.)

Prize 3.—Added by the Ecclesiological Society, £2 2s., and a book and a certificate, by the Architectural Museum Council, to Mr. C. J. Lea, High-street, Lutterworth.

PRIZES FOR PORTIONS OF THE WHOLE OF WORKS.

The Council of the Architectural Museum offered prizes of £1 1s. and upwards, with certificates in cases specially deserving, for the whole or a portion of any actual work, whether finished or not, in stone, wood, metal, glass, or colour, or for specimens of tracery, flat surface work, or masonry for mouldings, without ornament of any kind, which might be tendered to them, and appear deserving of the reward. Six specimens received under this head. Two specimens, before referred to, sent in other competitions, but not coming within their conditions, were transferred to this competition, and prizes awarded as follows:—

Extra Prize.—A book, to Charles Grassby, Elm-house, Ealing, for stone carving.

Extra Prize.—A book, to E. Dujardin, 7, Richmond-terrace, East-street, Walworth, for wood carving.

SUPPLEMENTARY PRIZES.

Mr. Mac Colla offered, through the Council of the Architectural Museum, two prizes of £5 5s. each for the two best designs for tile pavements; the one suited to a Gothic building, the other for a mansion in the Classic style of architecture.

Eight specimens received for the Gothic pavement. That adjudged to possess the most merit is by Mr. Edmund Sedding, of Penzance, and the £5 5s. offered has been given for this specimen in accordance with Mr. MacColla's wish.

Nineteen specimens were received for the Classic pavement. That adjudged to have most merit is by Miss Mary K. Beecham, of Cirencester; and the prize of £5 5s. has been given in the case of the Gothic pavement competition.

Mr. S. C. HALL, having been called upon by the Chairman, said he had had the great happiness of attending meetings of this Society from its very first formation. He had the pleasure to be present when the Society was originally formed, in the very humble locality entitled the Cockloft, in Cannon-row, Westminster. And he had the pleasure of attending there that night, to witness the very large advance, both in the prosperity of the Institution, and in the progress of the art-workmen who had been competitors for the prizes. He had watched the Institution with the most exceeding gratification, from its beginning to the present moment. He was present at its birth, and he earnestly hoped it might not be his destiny to be present at its death; for he should exceedingly regret any absorption of this great Society by that great Babel in the midst of which they were then standing. For from the day that took place, they might be sure it would be the downfall of the Society, and be the arresting of the progress of doing good to the art-workman, of conferring benefit upon the architect, and promoting the welfare of manufacturers throughout the country—(Hear, hear.) He had little to say about architecture, but he had much to say of the art-workman. The result of the long, sound, and good experience which he had had went to show that the only reason we did not compete with the foreign designer was the lack of knowledge of the art-workman; and this Society was highly calculated to promote the welfare of the art-workman, and thus promote the benefit of the art-manufacturer. He should deplore any incident, any event, that could lessen that great means of usefulness which, up to the present day, this Society had forwarded so largely. He knew that he was addressing a large number of art-workmen, and some of them had had their names heralded to the world as successful competitors for prizes for works of art. And he might state, for their information, that, in the *Art Journal* catalogue of the Great Exhibition he was preparing, he had always made it a study to ask the manufacturers to tell him the names of the artist-artisans, and those names he should publish in every instance where he engraved the work—(Applause.) He thought it right to insist on having the names of the artist-artisans who modelled and executed the works produced by

art-manufacturers—(Applause). He should deeply regret any step of the directors that would absorb their Society in the much larger one held in the building in which they were assembled. He did not think any good could come of it, but he thought much evil would—(Hear, hear). Though for saying so the building might tumble over his head, he believed a worse-managed concern did not exist in England than the Department of Science and Art in which they were assembled—(Hear, hear). Let them take, for example, the atrocious block which the great metropolitan city of London had received for the Great Exhibition—the atrocious embranchment of the earth, called a building of architecture, which surrounded them there, and which emanated wholly and solely from the Department of Science and Art, which had produced art for the art-manufacturers of this country for several years past, not to its service, but to its detriment. As to the building for the Great Exhibition, he thought it the ugliest and the worst he had ever had, and when foreigners came over who would grin when they passed Trafalgar-square, and laugh at the mistaken frescoes in the Houses of Parliament, they would more than grin and laugh when they saw the building for the Great Exhibition, erected by English architects—(Voices, "No, not architects.") Yes, but foreigners would not know what we knew, that no architect was blameable for that abortion—(Cheers.) The foreigner, on coming amongst us, would find this nation the wealthiest people in the world, people of vast judgment and knowledge, at the head of the taste, knowledge, and judgment of any people in the world; he would know that we had ample means for the erection of a proper building for the Exhibition; he would know that guarantees were obtained from the people, to the amount of nearly half-a-million, to secure the payment of the cost of the Exhibition, and he would exclaim what wretched use we had made of all the advantages given us. The foreigner would not know the scandalous job which subjected us to the Exhibition building. When he (Mr. Hall) knew that the superintendent of this Department of Science and Art; the man who had the direction of it all; the man who was nominally the secretary, but in reality the manager of the whole of this concern—

The CHAIRMAN thought it would be rather better not to talk of the managers of this Department.

Mr. HALL.—He did say that "Truth is mighty and it shall prevail," and he did not know why he should not say what was a published fact, that the Directors of the Department of Science and Art cried this building up at the Society of Arts, and said it was a work of Heaven-born art; that the works of Michel Angelo and others were of the same stamp, and that it would be one of the finest and greatest buildings ever erected in this country. That reminded him of the story of the American who fed his horse with deal shavings by putting a pair of green spectacles on his eyes—(Laughter). And the director of the Department said there was no necessity for consulting an architect in reference to the Exhibition building, as they had a gentleman at South Kensington who was better than the whole architects put together—(Hear, hear). If they should be guilty of the mistake of putting the Society of the Architectural Museum under the Department of Science and Art, he (Mr. Hall), who was present at the birth of the Society, should certainly be present at its death. He thought it more necessary to say what he had said as the conductor of an art journal, though it was not an architectural journal; and in his opinion he was bound to speak and write on the subject, because the conductors of the architectural journals would not do anything of the kind, and would not tell the world, broadly and plainly; that the building was a most atrocious abortion, and that it was not the architects of England who were responsible for it. He knew the task was not an agreeable one, but he who shrunk from doing his duty because it was dangerous or disagreeable was worse than a fool, was worse than a rogue, and was a physical and mental coward—(Much cheering).

The Rev. WILLIAM SCOTT, referring to the object of the meeting—the distribution of prizes—said he should speak of what had not been done instead of what had been done. He would remark, however, that the competition in the wood-carving department was exceedingly good, some portions being equal to the school of Grinling Gibbons. He regretted that, in the matter of manipulated ironwork, there were no competitors worthy of the prize offered. It was a matter of surprise that in this country, where metal was a staple manufacture, no candidate, judging from the specimens sent in, even attempted to win the prize. There was no one but must regret the state at which metal-work had arrived when he remembered that the gates at Hampton Court were made in this country. But he knew a common blacksmith at Maidenhead who had executed metal-work of great skill; though, perhaps, not equal to Quintin Matsys, he had produced some works of extraordinary skill and workmanship. He did not intend to follow Mr. Hall in his eloquent denunciation of the Exhibition building, but the existence of such a building showed the necessity of educating art-workmen. He would defy any human being to point out to him one single inch in that building, either in construction, decoration, or idea, or effect, that exhibited the mind or called out the energies of art-workmen—there was no exhibition of intelligence, mind, or skill. He would not deny it was a large work, and reflected some engineering skill on those who designed it; but he would say, that with such a building rising in their immediate neighbourhood, the greater necessity existed for such an institution as the Architectural Museum, the object of which was to educate men's minds, and to call out their higher intelligence.

Mr. G. GILBERT SCOTT, R.A., said he rose to propose what he was quite sure everybody present would most earnestly, and from the bottom of their hearts, respond to. His most agreeable duty was to beg of them to return their hearty thanks to the President for the most able and zealous manner in which he had conducted the proceedings of the evening—(Cheers). He could not help personally thanking the President for the able, studious, and laborious manner in which he had gone through the duties of that evening. The President had had a great excess of subjects on that occasion above ordinary occasions, and it was impossible for them to appreciate too highly the admirable manner in which he had laid those subjects before them. As to the position of the Museum, the Chairman had given lengthened particulars, and Mr. Hall had warned them of some dangers to be apprehended. There were some dangers to be apprehended, but he did not see why those dangers should be realised. The Department of Science and Art had for their special duty the promotion of art in connection with our manufactures, and a more important office could not devolve on any department or society. Their own (the Architectural Museum) department was for the promotion of art in connection with architecture, which was so closely allied with the promotion of art for manufactures; and what was dangerous to one must show that there was something wrong in the mode of management. He believed the Department of Science and Art was doing a great deal for the cause they had in view; and if both institutions were in earnest in their objects he must

LIVERPOOL DOCK WORKS.

HAVING been appointed engineer to the Mersey Dock Estate, Mr. George Forley Lyster has reported to the Works Committee on the present condition and probable time required for the completion of the works.

It appears that the new works on the Liverpool side and adjoining the Canada Dock are nearly completed, the masonry of the two inland carrier docks and tide dock is up and coped, with the exception in the latter of a small portion of the three entrances into the Canada Basin, which, being tide work, necessarily causes a slight but unavoidable delay in their completion. The foundations for the shed about to be erected over the eastern extremity of the South Carrier Dock for the use of the Bridgewater Trustees is in a forward state, being within 15 feet of the coping. The dock gates to the several entrances may be considered finished, and the bridges across the passage to the Carrier Docks are in hand, but nothing has as yet been done towards the construction of the ironwork of the bridge over the 80-foot entrance into the Canada Dock, at which point a considerable amount of work will also have to be done before a "through" communication can be effected. The levelling and paving of the quays generally are rapidly proceeding towards completion, and the docks may be said to be now ready for opening (but incomplete as regards the 80-foot bridge.) A length of 265 feet of foundation wall has been laid in at the south-eastern end of the timber float, but this work has been suspended pending instructions as to the general laying out of the adjoining land. The large sheds on either side of the Huskisson Branch Dock are in a forward state—that on the south being ready all but the slating and doors at the west end; that on the north, however, is much more unfinished, not more than one-half of the brickwork and about one-quarter of the roofing being done.

At Birkenhead the masonry in connection with the Woodside landing stage is in a backward state, not more than 25 lineal yards having been executed, which leaves, according to the present plan, 103 yards yet to be done. The completion of this being dependent on tide work will necessarily be a slow process. One-half of the masonry on which the pontoons of the floating slipway are intended to rest is built, and the remainder will doubtless be ready in time to receive that construction, the contract for which was only let to the Canada Works on the 12th December last, to be delivered in place on the 1st May next. The masonry of the Woodside enclosure may be said to be finished, but a considerable portion of the filling and all the surface forming yet remain to be done.

The works of the Morpeth Dock come next under consideration. Nearly two-thirds, or 420,165 cubic yards, of the excavations are complete, leaving 226,835 yards yet to be done. The greater portion of the masonry of the northern wall is finished, 50 lineal yards being coped, and 250 lineal yards being ready to receive the coping. The quantities of masonry in this dock are as follows:—

Executed to this date.....	16,570 cubic yards
Remaining to be done	42,580 "
Total	59,150 cubic yards

The outer sill of the 85 feet dock, which will connect the Morpeth Basin with the river, is completed, and 120 feet of the north wall carried up to the level of the old dock sill, leaving a gap between it and the river wall of about 40 lineal yards. The quantities of masonry here are as follows:—

Executed to this date.....	5,370 cubic yards
Remaining to be done, including alteration to present entrances	65,466 "
Total	70,836 cubic yards

Of the River Wall, South Reserve work, 333 lineal yards are ready for coping, and 73 lineal yards are carried up to the level of the old dock sill.

Masonry executed	28,586 cubic yards
Probable quantity yet to be done	9,560 "
Total	38,146 cubic yards

The next, and, perhaps, the most important, point considered in the report is that of the low-water basin, as not only involving the important novelty of the scheme, but also including constructive difficulties of no ordinary kind. The foundations around its site are of the most treacherous character, being clay overlaid by a wet and flowing sand, which, when bored into, "spouts up" in a perfectly fluid state, the rock being at such a depth as to preclude the possibility of reaching it with solid foundations; and, were it possible to have done so, the danger of tapping the quicksand would appear to be so formidable as to have rendered such a course highly dangerous. The foundations, therefore, must have been a source of grave anxiety, and every precaution necessary to secure the safety of the work seems to have been adopted. The 50-foot entrances, the sluices, and large feeding tunnels which lead from the great float, are built upon a forest of piles, and a similar course has been adopted wherever an indication of weakness has appeared in the substratum; yet, with all these costly but necessary precautions, slight settlements have here and there occurred in the walls, due to such enormous weights being laid on a bed of compressible material such as are described. There is little doubt, however, but that these sinkings (which are all vertical) will cease after the weight has fairly taken its bearings; but in order to provide against the possibility of any disarrangements in the wall, a solid "toe" of masonry, in conjunction with piling of a most substantial character, has been laid. The masonry of the lock, main tunnels, and sluices may be considered in general terms as finished. The sluice gates and the inner gates of the lock are fixed in position, and the side walls are ready for coping.

The north wall, for its entire length of 1,461 feet, with the exception of a gap of 129 feet, which still severs it from the river wall, is complete and ready for coping. The masonry in the gap is being proceeded with, but it will be some time before this is finished, as there is a very large mass of stuff to be first removed. The masonry on the south side of the basin is for the most part complete, there being a length of 345 lineal yards, which includes the recess for the floating bridge, brought up to its full height and ready for coping. A further length of 25 lineal yards of foundations is laid in to the height of eight feet below the old dock sill, but between the point where this terminates and the river wall there is a formidable gap of heavy work 132 yards in length yet remaining to be done. The foundations between these points are of the worst possible character, and frequent interruptions are occasioned by the breaking out of fresh-water springs from the substratum of quicksand (before described) which seems to overlie the entire surface of the rock. To deal with these springs, as well as the enormous amount of leakage involved by the wetness of the bottom generally along the site, it has been found necessary to sink another well for pumping pur-

poses; this is now in a forward state, and when the engine is fairly at work it is considered that it will effectually keep down the water. Another impediment to the work in this position is the large bank of stuff which lies right in the fairway of the wall, and which must necessarily be removed before the foundations can be got at. The outer or eastern portion of this wall, round the curve which connects it with the river wall, and consequently outside the protecting dam, is of necessity done by tide work, and the level to which the excavation has to be carried being 26 feet 6 inches below the old dock sill, it is only at fortnightly intervals, and then only for an hour or two, that the work can be proceeded with. These impediments, combined with the necessity of the foundations being all piled and carried up in a most careful manner, will doubtless make this otherwise short length a tedious and lengthy operation.

The completion of the coffer dam for excluding the tide, for the purpose of enabling the contractor to complete his excavations, is mainly dependent on the masonry adjoining the river wall against which it will abut, so that until this is done a large portion of the excavations must remain untouched.

The quantities in this portion of the works are as follows:—

Masonry executed.....	163,173 cubic yards
Do., probable amount yet to be done	15,000 "
Total	178,173 "
Excavations done.....	815,729 "
Do., probable amount yet to be done	171,000 "
Total	984,728 "

Between Low-water Basin and Northern Entrances of the river wall, north reserve, 66 lineal yards are ready for coping, and 23 lineal yards are carried up above the old dock sill.

Masonry executed.....	8,552 cubic yards
Do., probable amount yet to be done	6,958 "
Total	15,510 "

The surplus excavations for the two westernmost graving docks have been taken out. There remains about 90,000 cubic yards yet to excavate, a quantity which will be required to make up the ground behind the masonry. In the 50-foot graving dock the sills are complete, and the gates ready for putting together, the side walls for a length of 15 yards inside; the hollow quoins are ready for coping, 15 lineal yards of the dock bottom are built, and a further length of 39 lineal yards concreted, and the masonry over the same progressing. In the 85-foot graving dock the cuissin sill is complete, the side walls up to the hollow quoins ready for coping, and a further length of 15 yards concreted, and the masonry progressing over the same. Railways are laid for supplying stone, &c., and a mortar mill is in course of construction, having been commenced on the 10th of December last.

A summary of the foregoing report will show that in round numbers there are 500,000 cubic yards masonry, 1,212,630 cubic yards excavation, and 282,574 superficial yards paving, remaining to be done; 24 pairs of gates, and two caissons to be built.

Correspondence.

PAROCHIAL ASSESSMENTS.

SIR,—The Bill to amend the law relating to Parochial Assessments in England, prepared and brought into the House of Commons in this present Session by Mr. Clive, Sir George Grey, and Mr. Villiers, proposes by the 3rd Clause:—

"That every rate to be hereafter made for the relief of the poor shall be made upon the full rateable value of the hereditaments liable to be rated, such rateable value being ascertained by an estimate of the yearly rent which a tenant would pay for the same on a lease for a term of seven years, the lessee bearing all the usual tenant's rates and taxes and tithe commutation rent-charge, if any, and the lessor undertaking to provide the probable annual cost of the repairs, insurance, and such other expenses as may be necessary to maintain the hereditaments in their actual state."

Allow me to endeavour to point out the unfairness of this standard of rateable value:—
B holds land of A at an annual rental of £40; C holds a house of him at £40; D holds a house of him at £40; each tenant pays rates, taxes, and tithes, but does not repair or insure; the landlord A has to do what is necessary to maintain the property in its actual state; B's land costs A nothing; therefore the annual value is still £40. C's house, being comparatively new, requires an average annual outlay of only 10 per cent.; the net annual income is, therefore, £36. D's being a very old house costs on an average of seven years 25 per cent., leaving only a net annual income of £30. By the proposed Bill the annual rateable value of each property will be £40. Surely the fair thing would be to assess the properties at £40, £36, and £30 respectively.

EDWD. RYDE.

Surveyor's Offices, South Eastern Railway, S.E.,
27th February, 1862.

THE ROYAL ENGINEERS.

SIR,—There is nothing so like the thing as the thing itself; no counsel needs to rack his brain seeking to prove a prisoner guilty, when a plea to that effect is put in by the culprit himself; by the same rule, no charge of incompetency made against the corps of Royal Engineers will have so much weight as a confession by one of themselves; that they are not only guilty of what has been urged against them, but to a much greater extent, so much so as to be beyond redemption. The power impelling such an *exposé* as the article in the *United Service Magazine* for January last, must be some other than penitence. I cannot conceive that any other terms will give so clear a clue to it as those I mentioned in my previous letter—"despair, ignorance, and malevolence."

The writer of the article was, no doubt, perplexed for a time as to how he should reconcile his brother officers to such admissions and accusations as he felt it impossible to avoid, in asking for a new lease of sincerity; he must also have felt very much relieved from that perplexity when the idea of vilifying the civil officers occurred to him, than which nothing is more palatable to the majority of the officers of the corps, it being a commodity in which they have at all times dealt rather freely, but more liberally still since the agitation for putting them in their proper positions has attained such proportions as to make it unpleasant for those whose interests are jeopardized.

Upon the present anomalous positions of both civil and military officers I need say little, as I can only repeat what has been so fully urged in your columns and elsewhere, by none more fully than the writer of the article I am alluding to; but when I come to the system he proposes, and look at it in a practical and professional manner, with some little regard to the cost of introducing and working it, I am struck with amazement; I can hardly believe that I am not dreaming, because I cannot realise to myself the state of mind of a person who would have the effrontery to venture on an absurdity so monstrous and so opposed to common sense as to propose to carry out the works and buildings required under the War Department, by engineer officers and sappers, by daywork.

I will premise that no amount of training or drilling will ever cause military officers' except in the rarest cases, to give that attention to the studies and practice necessary to

qualify them for holding the civil appointments, and performing the civil duties of the Royal Engineer Department. They regard at all times too much their military position: they are too much infatuated with the "officer and gentleman" notion, and in consequence treat with contempt their "civilian aspirants," and invariably act as if they believed it would be a lowering of their dignity to acquaint themselves with any of the details of a profession, with which they would not be troubled even in name, were it not that thereby they draw from the Exchequer not only the cost of a great part of their education and of their maintenance whilst being educated, but also the value of their commissions, and the pay and allowances which follow. This is one view, I will take another.

Is it reasonable to expect that all military officers of the corps of Engineers are capable of acquiring the information necessary for the civil appointments, supposing them to be willing to learn? Have they not, as military studies, what is next to impossible for them to know, and what very few of them master? On this point I would refer your readers to a blue book published in 1857. "A Report of the Commissioners appointed to consider the best mode of re-organising the system for training Officers for the Scientific Corps," where they will find that I do not in the least exaggerate when I say, if officers were to become qualified as military engineers, they would have no time to spare from their military studies, their minds would be almost bewildered with their military profession; unfortunately, however, for the country, they have prostituted the good name and duties of the corps until it has become almost a reproach, and they are now neither military engineers, nor capable of performing civil duties, but an incubus, from which it would be an act of charity to relieve the tax-payers, who, in addition to legitimate and necessary taxation, are also taxed for what is in reality, as far as "giving money's worth for the money they receive," but little better than a corps of "National Pappers."

All engineer officers dread, as do "burnt children the fire," any allusion to what they as officers cost, as also to the possibility of private enterprise and means producing more satisfactory results than do Government establishments; they in a specious and plausible, and to the uninitiated, in a very satisfactory manner, make up a case for engineer officers receiving their education at the public expense. I can see no reason why the country should pay, as it now does, about £500 for a youth of from "eighteen to twenty years of age," who is then launched out "with little learnt, and that soon forgot," when the whole of the universities, colleges, and other large educational establishments would, if necessary, make military engineering, under competent professors, one of the branches taught, and from whence, free of expense, by public competition, could be procured all the necessary number of officers, and, without a doubt, much more qualified. What stimulus is there to exertion for the youths who, when once they join Chatham, know that they are safe? that, happen what will, short of a military crime, their nest is feathered; this feeling, engendered too at the most critical period of life, when characters are yet undeveloped, and when, should the inclinations and tendencies be for an inactive and leave-to-others-to-do-the-work sort of life, no after reprimands will rectify or prevent. "The youth is the fore-shadowing of the man."

Great stress has at all times been laid by engineer officers upon the necessity of employing them upon "all Government works of every nature, both at home and abroad, such as docks, breakwaters, drainage, surveying, &c.," and a "Lieut.-Colonel Simmons, C.B., R.E.," in the blue book I previously mentioned, has the coolness to say, after urging the foregoing plea—"The objection ordinarily made to this practice by the civil profession, that it would be taking the bread in many cases out of their mouths, ought not to be listened to, for surely the country, after going to the enormous expense of educating and maintaining a number of professional men, have an undoubted right to the employment of their professional services." He also considers "that much benefit would accrue to the public service if officers were assisted in travelling to visit public works, both civil and military, at home and abroad" (the article in *Colburn's* has a similar idea, almost word for word). Without a doubt Lieut.-Colonel Simmons, when at Constantinople, felt that travelling would probably afford him an opportunity of acquiring what would enable him to hold a civil professional appointment in the Royal Engineer Department, and perform the duties thereof as well as do his brother officers; for, if I mistake not, he has for the last fifteen years or more been engaged on duties with which that department is not at all concerned. He was for many years an inspector of railways at the Board of Trade, where, perhaps, he had occasion to peruse the opinion of Sir Charles Pasley "that the Britannia-bridge would fall of its own weight." He was also employed on a military duty in North America, also in Turkey, and for some years was Consul-General at Warsaw, from whence a few months since he was removed to the Camp at Aldershot. The only result, however, the country would obtain from engineer officers being sent to inspect civil works and buildings would be that in addition to paying the enormous expense of educating and maintaining them, it would be called upon to pay for their enjoyment and amusement; for what benefit could possibly arise from sending a person to inspect something of which he knew but little and cared less. It would be almost as reasonable to expect to make artists of house painters, simply because they had been paid for gazing on some splendid oil painting, in happy ignorance of either its beauties or merits. The Government exercises a wise discretion in refusing to adopt such clap-net; they, as the guardians and distributors of the revenue of the nation, as well as the public who contribute towards it, are awakening to a conviction that although up to this time engineer officers have had a "pretty deep dip into the bag," it is now quite time that the question be asked, "what evidence of efficiency can be produced as a return for 'the enormous expenditure in educating and maintaining them' that has been incurred, and as a reason for continuing them in their present position and to their present numbers?"

A revolution in the corps, a fresh batch of officers from top to bottom, would be necessary to impart fresh confidence in their abilities to perform the duties of the appointments now held by them, any former confidence being shaken to its very foundations by the disclosures, accusations, and admissions, so frequent of late; and some stronger proof of ability and requirements than has ever yet been displayed before the nation would allow of such an enormous job being perpetrated, as to hand over all the works and buildings under the War Department, building, or to be built, to the corps of Royal Engineers. If it were not for the ruinous outlay that would be caused by the introduction of such a system, the strongest opposers of it could wish for nothing better. Every practical or professional man, knowing the working of the corps, and the abilities for civil duties of either officers or men, could foretell that any such system would be followed by overwhelming and irretrievable failure as that night follows day.

Before leaving the officers I should like to estimate as near as I can what the officer part of the *Colburn's* scheme would cost to put it in working order. Without very tedious and elaborate calculations it would be impossible to show what it would cost for working when ready.

The cost of an engineer to the country up to the time of joining Chatham for education and maintenance, quarters, salaries of professors, &c., &c., is not less than £300; for two years at Chatham, including pay, quarters, professors, &c., at £200 per annum, £400. For providing extra accommodation for extra number, including establishment at Chatham, and at the academy, museums, model rooms, lecture halls, churches, schools, exercising grounds, materials for practice, new professors, &c., &c., £300 each, or, in even figures, £1,000 as a total, which for the 114 officers amounts to £114,000.

There are now in the corps (see article) 382 officers. Taking 32 as the number who are too old to be taught, there would remain 350 who would have to go to Chatham for one year to qualify them for the new system. Their pay and allowances would be considerably more than that of young lieutenants. I will take it at £350, as an average, or, for the 350, £117,500. This, with the cost of the new officers, makes a total of £231,500; and when this amount is expended, it will be comparatively thrown away, because, as far as architects, civil engineers, and surveyors are concerned, it will only be "creatures of a year as compared with those of a month, and in either case ridiculous;" whereas they could be procured free of expense to the country, and withal competent and qualified. Any improvement in military engineering knowledge is not to be expected, as the extra period at Chatham is not for extra military education. And even if it were, as a writer in the *Army and Navy Gazette* last week says—"Civil engineers, after some military training, need never be afraid of meeting an equal number of Royal Engineer officers." I see also, in last month's *Colburn's* one or two notices of military engineering failures. I see that at Spitham a civil engineer is engaged to put in the foundations of a fort; and, therefore, taking a broad view of the matter, it is a question, seeing, in addition to the foregoing, that the requirements now brought into the army at large by officers are perhaps equal, if not superior, to those of officers of the Royal Engineers—there is any necessity for a separate corps for military

engineering, whether it would not be politic to do away with the present corps, and institute in its stead some means whereby the necessary engineering knowledge can be diffused throughout the whole army; the civil duties being entrusted to those who are competent, whether the present civil officers, or architects, surveyors and civil engineers from outside, for whose education the country will not be taxed, and in whose works will be visible something more in accordance with "the age in which we live" than now meets our eyes as productions of the Royal Engineers. Forts would be built without assistance from outside, and if monumental arches are required, they would be forthcoming, without applying to others to design and erect; and if another Exhibition building should be required, when foreigners came to visit it they would go back to their own country without being uncertain whether they had seen two magnified dragons' helmets, or, as the editor of the *Civil Service Gazette* called them, "Metal Dish-covers, misnamed Domes."

I have drifted into a much longer letter than I intended on the officer part of the scheme; the remainder will be disposed of in less space on another occasion, if you will be kind enough to insert this in the *BUILDING NEWS*, which I am almost ashamed to ask you to do, and would not if the subject did not require all the ventilation possible.

PETARD.

TENDERS FOR THE LUNATIC ASYLUM, KENT.

SIR,—The tenders for the lunatic asylum, at Stone, Kent, for the Corporation of the City of London, recorded in your last number, afford an illustration of the different estimates assumed by builders for the respective values of Ancaster and Portland stone. The greatest difference is 7-7 and the lowest 1-2 per cent., the average of sixteen tenders being 3-6.

I am inclined to think that there is a mistake in one of the tenders, and that the extra value of Portland over Ancaster may be assumed to have raised the total value of the work at an average of 3 per cent.

T. W. G.

14, King William-street, Strand, W.C.

TESTIMONIAL TO MR. HAYWOOD, CITY SURVEYOR.

AT the first meeting of the Commissioners of Sewers, in their new court, it was unanimously resolved that a purse containing one hundred guineas be presented to the engineer and surveyor, Mr. William Haywood. Mr. Haywood, in thanking the court, expressed his gratitude for their kind mark of approbation, and said the manner in which it had been given was extremely flattering, and, as long as he was in their service, he would do his best to deserve their approbation.

TENDERS.

BANK, OCNILE.

For building a bank at Oundle, for the Stamford, Spalding, and Boston Banking Company. Mr. W. Eve, architect. Quantities not supplied.
Thompson and Ruddle.....£1,985 Meath (accepted).....£1,390 0
Cesford.....1,590 Storer and Wright.....1,323 14
Boddington.....1,535

DWELLING HOUSE, STREATHAM.

For a new house at Streatham. Mr. R. W. Drew, M.A., architect. Quantities supplied by Mr. James Alfred Bunker.
Gannon.....£2,340 Turner and Sons.....£1,859
Downs.....2,322 Deacon.....1,840
Bartlett.....2,085 Trellope and Sons (accepted).....1,834

DEVONPORT, STONEHOUSE, AND CORNWALL HOSPITAL.

For the erection of this hospital, on a site granted by the War Department, at the head of New Pillage-hill. Quantities supplied to Messrs. Jenkin and Co. by Messrs. Arding and Bend, surveyors, of Bedford-row, London.
J. W. Sawyer.....£3,953 Adams and Son.....£3,689
Willcocks.....9,487 Matcham.....8,548
Lethbridge.....9,437 W. Harvey.....8,000
Simons and Hoskin.....9,220 Perkins and Co.....7,950
Clark.....8,990 Cull and Pellrick.....7,594
Hutbard Brothers.....8,700 Finch.....7,555
Elliett.....8,691 Jenkin and Co. (accepted).....6,900
These tenders do not include the cost of gas and water supply, or for stoves, boilers, and grates.

GENERAL WORKS, FOR METROPOLITAN BOARD OF WORKS.

Western Division of the Metropolis.—The tender of Mr. E. Thirst, of John-street, Chelsea, for three years, has been accepted, at 12½ per cent. under the prices enumerated in the schedules.

Eastern Division.—The tender of Mr. W. Dethick, of Great Cambridge-street, Hackney-road, for three years, at 12½ per cent. under schedule prices, has been accepted.

Southern Districts.—The tender of Messrs. Hill, Keddell, and Robinson, of White-chapel-road, for three years, at 12½ per cent. under schedule prices, has been accepted.

WAREHOUSE, LONDON.

For partially rebuilding a warehouse, No. 23, Aldermanbury, for Francis Broughton, Esq. Mr. F. G. Widdows, architect. Quantities supplied.
Green and Son.....£2,309 Brass.....£1,940
Child, Son, and Martin.....2,039 Ennor.....1,931
Axford.....1,998 Browne and Robinson.....1,865
Ashby and Sons.....1,979 Ashby and Horner.....1,864

STABLES, ESSEX.

For the erection of coach-house and stables, at Buckhurst-hill, Essex. Mr. J. H. Rowley, architect, 17, St. Helen's-place, City.
Dyer.....£275 Outhwaite (accepted).....£219
Rivett.....223

VILLA, UXBRIDGE.

For the erection of a villa residence, at Uxbridge, for E. Hedgcock, Esq. Mr. Robert W. Edis, architect, 53, Lincoln's-inn-fields.
Simpson.....£1,800 0 0 Morten.....£1,633 0 0
Spurgeon.....1,712 10 0 Hardiman and Sanden.....1,587 0 0
Shoppee and Son.....1,710 0 0 Parsbridge and Son.....1,515 0 0

ALTERATIONS, &c., LONDON.

For alterations and repairs, at No. 177, Ratcliff-highway. Mr. F. G. Widdows, architect.
Whelan.....£154 Williams.....£117
Smith.....147 Ennor.....114

THE OLD ALMSHOUSES OF THE DRAPERS' COMPANY.—Messrs. Pullen and Co. have sold by auction several houses, situated in Crutched Friars, and which were built in the reign of Henry VIII. They were erected in the year 1535, by Sir John Milbourne, Knt. (a wealthy member of the company), for about twenty old and infirm inmates, who were liberally supported by funds bequeathed for that purpose. The houses are still in a very solid state, and have been visited by many antiquaries. They will be forthwith pulled down, and the site appropriated to the erection of chambers. New almshouses have been erected by the company at Tottenham for their decayed members.

COMPETITIONS OPEN.

INFIRMARY.

LONDON.—The managers of the Central London District School desire to have designs for a detached infirmary for their boys' and girls' schools at Cuckoo Farm, Hanwell. The building must be of a simple and inexpensive character, in harmony with the existing buildings, and comprise accommodation as required by the Poor Law Board for 180 boys and 180 girls, each sex to be separately distributed in six rooms. There must also be a kitchen, surgery, waiting-room, and other necessary offices underneath. Particulars on application to the superintendent at the schools. The plans must be drawn to a uniform scale of 8 feet to an inch, each to be accompanied by a specification of the works and an estimate of their cost. No premium will be given, but the architect whose plan is chosen will be paid by commission for supervision, &c., of erection of the building in the usual way. Each set of plans must be subscribed with a motto, and forwarded with a sealed letter, containing the motto and the author's name, to Samuel Heath, Jun. clerk to the Board, No. 10, Basinghall-street, E.C., on or before April 2.

LAYING OUT.

TRAFFORD.—The directors of the Trafford Freehold Land Society desire plans, before the 25th March, for laying out and allotting the estate belonging to the Society, in Higher Trafford; consisting of about 40 statute acres. Premiums will be given for the best and second-best plans. Each plan to be accompanied with an estimate of the cost of the formation and construction of the roads and sewers, and also of the laying out of the land. Particulars from Mr. John Quinn, Chairman of the Society, 22, Lord-street, Liverpool; or from Mr. H. P. Priest, Secretary, Market-cross-chambers, 19, Market-street, Birkenhead.

COMPETITIONS AWARDED.

The committee for the erection of the proposed new Congregational chapel and schools, at Plymouth, have selected the design marked "Utile Dulci," submitted by Messrs. Paul and Ayliffe, of Burley under whose superintendence the works are to be carried out forthwith. The second premium has been awarded to Mr. Tarring, of London. Thirty-six designs were sent in.

CONTRACTS OPEN.

MECHANICS' INSTITUTE.

DUDLEY.—For the erection of a new mechanics' institute and public hall, at Wolverhampton-street, Dudley, in the county of Worcester. Plans, &c., at the office of Mr. William Bourne, architect, Tower-street, Dudley, to the 17th March. Sealed tenders, endorsed, "Tenders for Mechanics' Institute at Dudley," are to be forwarded to Joseph Stokes, solicitor, Wolverhampton-street, Dudley, Honorary Secretary, on or before the March 20.

BANK.

IRELAND.—For erecting a branch bank and manager's residence at Nenagh, co. Tipperary, for the Provincial Bank of Ireland. Plans, &c., at the office of the architect, W. G. Murray, 68, Lower Gardiner-street, Dublin, up to the 31st inst. on which day estimates are to be forwarded addressed to Thomas Hewat, Esq., Provincial Bank of Ireland, 42, Old Broad-street, London, E.C.

INFIRMARY.

LYMINGTON.—For the erection of a fever ward upon part of the workhouse premises in Lymington. A plan of the work, with specifications, at the office of Messrs. Colborne and Son, surveyors, Lymington. Sealed tenders to the Clerk to the Guardians at his office, in Lymington, on or before March 22.

PRESTON.—For the erection of the whole or any portion of a new church, to be built at Preston. Plans, &c., at the Upper School-room, Wellfield-road, Preston, and also at the office of the architect, Mr. E. G. Paley, Lancaster, to 18th March, inclusive. Tenders to be sent in under cover to the Rev. Thomas Clark, West Cliff-terrace, Preston, endorsed "Tender for St. Mark's Church," on or before March 22.

CHAPELS.

BRISTOL.—For the erection of the Clifton Wesleyan Chapel. Drawings, &c., with Fosters and Wood, architects, 6, Park-street, Bristol, till the 28th inst., on or before which the tenders are to be sent to the architects, sealed and endorsed "Tenders for Clifton Wesleyan Chapel."

OLDHAM.—For the erection of a Wesleyan Chapel, at Shaw, near Oldham. Plans, &c., at the vestry of the Wesleyan Chapel, at Shaw, until March 22.

SCHOOL.

SURREY.—For the infant school and house proposed to be built at Farncombe, near Godalming, Surrey. Plans, &c., at the Farncombe National Schools. Tenders to be sent to C. H. Howell, architect, 6, Crescent, New Bridge-street, London, before the 24th March.

PARSONAGE.

DEVON.—For the erection of a parsonage house in the parish of Shute. Plans, &c., at the Beagles Inn, Shute. Tenders to the Rev. J. Binford Sellwood, the Ridge, Honiton.

VILLAS.

DORCHESTER.—For the erection of a villa and offices, at Dorchester. Quantities, with forms of tender (price 21s. returnable) from Mr. Eales, architect, 9, Welbeck-street-west, London, to whom tenders before March 22.

CAMBRIDGE.—For the erection of a dwelling-house or villa, to be built in March, in Cambridgeshire. Plans, &c., at Mr. Edgar Foster's, at March. Tenders to Mr. Foster, on or before the 31st March.

DWELLING HOUSES.

TWICKENHAM.—For building eight small houses at Twickenham. Drawings, &c., at the office of the architect, Henry McCalla, C.E., 25, Westbourne-place, Eaton-square, to whom tenders by 12 noon March 24.

DUMFRIES.—For building a dwelling-house and offices, at Heads, in Lochruton. Plan, &c., at Heads. Tenders to W. Beattie, Esq., Newton, on or before March 26.

PETERBOROUGH.—For building a house, opposite the Corn Exchange, in Peterborough. Plans, &c., at the Phoenix Brewery. Tenders to be sent in on or before the 18th inst.

HANTS.—For the alterations and works required to be done to the dwelling-house and offices on the Sherwoods Estate, West Green, in the parish of Hartley Wintney, Hants. Plans, &c., with Messrs. Haslam and Buckland, surveyors, &c., 23, Friar-street, Reading; or at the dwelling house, West Green. Tenders to be delivered at 23, Friar-street, before the 22nd inst.

HANTS.—For the erection of a dwelling-house and offices, at Little Arnwood, in the parish of Hordle, Hants. Plans, &c., with Messrs. Haslam and Buckland, surveyors, 23, Friar-street, Reading, Berks; or at the Farm-house. Tenders to be delivered at 23, Friar-street, Reading, on or before March 27.

BRIDGE.

LEICESTER.—For the formation and construction of the abutments and retaining wing and parapet walls, piers, &c., for the intended new Bow-bridge. Drawings, &c., with E. L. Stephens, borough surveyor, Local Board of Health Office, Silver-street, Leicester. Tenders are to be delivered to him by the 19th inst., endorsed "Tenders for Abutments, &c., Bow-bridge," and addressed to the "Chairman of the Highway and Sewerage Committee."

WORKHOUSE.

GREENWICH.—For the erection of apartments for twelve aged married couples, at the Union Workhouse, Woolwich-road, Greenwich. Plans, &c., at the Union Workhouse. Tenders sealed and addressed to the Guardians of the Greenwich Union, marked "Tender for Buildings," to be delivered before two p.m., on 20th March.

POLICE-STATION.

DEVON.—For the erection of police station, &c., at Northtawton, Devon. Plans, &c., with Henry Ford, Clerk of the Peace, Castle of Exeter, and at the office of Robert Fulford, Esq., clerk to the Justices, Northtawton. Sealed tenders endorsed, "Tender for Northtawton Police Station," to be sent to Mr. Ford on or before the 1st April.

MILITARY WORKS.

SCOTLAND.—For contracting from 1st April, 1862, to 31st March, 1865, inclusive, for the performance of such artificers' work as may be required at the under-mentioned stations, viz.:—Edinburgh Castle; Piershill Barracks; Leith Fort, Martello Tower, and Blackness Castle; Greenlaw Military Prison and Barracks; Perth Barracks; Dundee Barracks and Broughty Castle; Dunbar Barracks; Berwick and Holy Island; Glasgow Barracks; Dumbarton Castle; Paisley Barracks; Hamilton Barracks; Ayr Barracks; Fort Matilda; Stirling Castle; Aberdeen Barracks, Beach and Torry Point Batteries; Forts George, Angus, and William. In all cases, the seven trades are to be in one tender for each station, and the contracts to be determinable at any period after the first year, on either party giving to the other three months' notice in writing. Any person may tender for one or more of the above stations. Parties applying for forms of tender must give sufficient guarantee to the entire satisfaction of the commanding royal engineer of their being fully competent to undertake and execute any new works or repairs that may from time to time be ordered on the contract schedules. Every information on application to the Royal Engineer or Barrack offices, at the several stations herein named, together with printed schedules of the prices, with the terms of contract and letter of tender for the several descriptions of artificers' work, to the 27th February, upon making a deposit of five shillings for the same. The letter of tender to be sealed, and transmitted under cover to the Director of Contracts, War Department, Pall-mall, London, S.W., so that it may be received on or before the 10th March, 1862, and to be marked on the left-hand corner of the envelope, "Tender for Works at ———."

GUERNSEY, &c.—For the usual triennial contracts for works and repairs to War Department Buildings in the Islands of Guernsey and Alderney. Schedules of prices and forms of tender (for which 6s. 3d. for each set will have to be deposited), and all other information may be had on application to the surveyor, at the office of the Inspector-General of Fortifications, War-office, Pall-mall, London, S.W.; and at the Royal Engineer Offices in Guernsey and Alderney. Tenders will be received by the "Director of Contracts," War-office, Pall-mall, London, S.W., on or before the 20th March.

NORTHERN DISTRICT.—For the performance of such of the under-mentioned descriptions of work as may be required at Whitehaven and Maryport, in the construction of gun-platforms, parapet walls, magazine and artillery store, inclosure fence, &c. (in the batteries for drill and practice about to be formed there); in the partial levelling and draining of the sites for the batteries; and in the formation of roads. Schedules of prices and printed forms of tender until the 19th of March, at the Royal Engineer Office, Newcastle-on-Tyne, where plans and specifications of the works may at the same time be seen. Each contractor will be required to tender for all of the trades:—Masons', paviors', bricklayers', and plasterers' work; carpenters' work, slaters' work, smiths' and ironfounders' work, plumbers' work, painters' and glaziers' work. Each tender to be properly filled up and signed, and transmitted under cover to the Director of Contracts, War Office, Pall-mall, London, S.W., on or before the 25th March, and marked on the outside, "Tender for Works at ———," in the Northern Royal Engineer District.

PORTSMOUTH DISTRICT.—For the several works and repairs to the fortifications, barracks, and other buildings required by the War Department at the places undermentioned, upon a contract for three years, from the 1st of April. Intending contractors may be furnished, by payment of 7s. 6d. with the printed schedules of prices and the conditions of the contract, with every necessary information respecting the same, on application at the Royal Engineer Office, Portsmouth, until the 18th of March. Stations for which separate tenders will be received:—Portsmouth.—Including Portsea Island and South sea Castle, with 5 per cent. allowed for Lumps and Bastein Batteries, Fort Cumberland, Hilsa, and Tipner, and 10 per cent. for works on Portsmouth Hill. Gosport.—Including Forton, Priddy's Hard, Haslar, Forts Monckton and Blockhouse, with 5 per cent. allowed for Ports Brockhurst, Rowner, Elson, Gomer, and Grange, Stokes Bay Lines, Brown-down, and Gilkicker batteries; and 10 per cent. for Forts Wallington and Fareham. Isle of Wight.—Albany barracks and East Cowes, with 10 per cent. allowed for each of the other stations on the island. Southampton.—(Pensioner's Establishment) with 5 per cent. allowed for Marchwood, and 10 per cent. each for Hnrst and Calshot Castles. Winchester, Chichester, Christchurch, Trowbridge, Littlehampton. One contractor only will be accepted for the whole of the trades for each of the above-named stations, but the rates of per-centage at which the parties tender may be different for each trade, at their option, but such rates must be shown in the proper place on each of the schedules. The tenders will be required to be delivered before twelve noon, on 22nd March, at the War Office, Pall-mall, London, addressed to "The Director of Contracts," and endorsed "Tender for Artificers' Work, Portsmouth District," in the left-hand corner of the envelope.

SEWERAGE, &c.

DUMFRIES.—For constructing and completing a main sewer and its appurtenances, in the White Sands, Dumfries. The sewer will be about 500 yards in length, and to be built of bricks with fire-clay invert blocks. The section, &c., with James Darbous, C.E., Buccleuch-street, Dumfries; and tenders to be lodged with William Martin, town clerk, on or before 20th March.

WARRINGTON.—For the laying of sewers with their appurtenances in the following streets, in Warrington, viz.:—Bold-street, Egypt-street, Suzet-street, Palmira-square, Crown-street, Newton-street, Orford-street, Naylor-street, James-street, and the streets adjacent thereto. Drawings, &c., with Mr. B. P. Coxon, C.E., borough surveyor. Tenders endorsed "Sewerage Contract No. 17," addressed to the Chairman of the Paving and Sewerage Committee, are to be left at the Town-hall not later than six p.m. on the 17th inst.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

11. M. T. F.—As soon as the remainder can be completed; now very shortly.

12. & R. P.—E.—Thanks; oblige us with the architect's name.

13. T. B. (Biggleswaite).—Looking to the tone of your letter, we are only disposed to say that the course notified will be carried out. Politeness costs nothing.

C. W. (Ireland).—Try to obtain an introduction to the architects concerned in such matters. There is no other chance of succeeding.

J. B. (Alnwick Castle).—Send order to our publisher, who will supply back numbers.

E. A. H. (Liverpool).—Thanks; shall appear.

B. B. (Ipswich).—Will be ready shortly.

G. C. H.—Three and three-quarters per cent. on the amount of contract is the usual charge for such services; but on small works, such as yours, a higher rate might be fairly charged.

J. S. M.—Should entrust the work to an architect.

W. H. R. H.—Thanks for sketch; shall be engraved.

C. K. M.—We cannot say.

S. E. (York).—Below our mark.

A. F.—Yes; if suitable. We cannot promise.

J. H. L.—Refer to our fourth and last volumes.

T. L. C. K.—Declined with thanks.

O. E.—Proof shall be sent if wished.

Y. B.—E.—We cannot decide wagers.

E. R. P.—Shall hear from us.

D. I.—Communication has not been received.

W. J. (Yarmouth).—Yes.

G. S.—Send name and address for our private information.

H. B. H.—Letter has been forwarded.

G. W.—Too late.

F. L. F. (Carlisle).—Next week.

A. W.—Very shortly we hope.

** All communications to be addressed, The Editor of the BUILDING NEWS, 20, Dowell-court, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 18 to 21, Old Bowell-court. Advertisements are received up to six o'clock on Thursdays.

CONCENTRATION OF THE LAW COURTS.

IMPRUDENT as it may be to predicate what erratic course will be taken in the House of Peers under the obstructive influence of ex-Lord Chancellors—great lawyers *en disponibilité*—we venture to anticipate a complete and proximate triumph for the measures which the Hon. Mr. Cowper introduced to the House of Commons last Friday night. For the wisdom and urgency of concentrating the Courts of Law and their offices in one locality become more patent day by day, and the question has in consequence been narrowed to two issues, which admit of easy debate and early settlement.

They are, the application of money at the disposal of the Court of Chancery, which none can claim, and the choice between the centre of Lincoln's-inn-fields and the area between Carey-street, Strand, Bell-yard, and Clement's-lane, for the site of the concentrated courts.

It may be that in the House of Lords the personal convenience of the Master of the Rolls will be used as an argument against concentration and in favour of dispersion. In that case the convenience of thousands of counsel and attorneys, the economy of time and money of suitors for justice, will be held as nothing in comparison to the convenience of Sir John Romilly and of some half-dozen of his officers. The Master of the Rolls is also the Keeper of the Records. He combines with the administration of justice the custody of public documents. Let us endeavour to explain his position to the better understanding of the motives for his advocacy of dispersion, and, so far as his court is concerned, of its seclusion and separation from other courts.

Independently of his judicial business, the Master of the Rolls has had, within the last few years, a large addition to his record business. To his care are committed, besides the Rolls—properly so called—the records of the State Paper Office, and of various departments of Government, such as the Admiralty, the Audit Commissioners, the War Office, &c. Moreover, Sir John Romilly has undertaken the care and superintendence of the publication of chronicles and calendars—a work of the highest historical and national importance, which has given him well-founded claims upon the gratitude of the public—more particularly of that section which is interested in historical and literary studies. The duties of Sir John Romilly, as Keeper of the Records, are not very onerous, though they may be felt as burdensome when added to his judicial duties. He says they take an hour a day, or six hours a week; that a great portion of it is done by two or three words of direction; a letter has to be opened and answered in conformity with two or three words of direction; in various other cases his signature is all that is required: and that a great deal is merely formal, with a little addition of direction. At present the Record Office and Rolls Court are in the same building. By going down to his court a quarter of an hour or twenty minutes before it meets, by taking ten minutes from his luncheon time, remaining half an hour after the court is up, and employing the odd half-hours when he has to wait for counsel, the Master of the Rolls gets through a great amount of record business, assisted chiefly by the facility he has of sending for his subordinates, who are in different parts of the building. Were his court to be concentrated with other courts in a Palace of Justice, as proposed, he could not transact his record business in these odd bits of time, but would be obliged to devote to it a considerable portion of his vacation. This would be a very sad thing to do; and, however great might be the saving of time and money to the profession and to thousands of suitors by including the Rolls Court in the concentration scheme, no one desires it should be done at the expense of the vacation amusements of Sir John Romilly. Rather perish the project, let justice be delayed and rendered unnecessarily costly to generations of suitors, before the Master of the Rolls should be compelled to curtail

his vacation rambles a day. Are not individual enjoyments to be preferred to the satisfaction of an empire's requirements?

But may not the problem be solved, to the delight of all parties, by separating the office of Master of the Rolls from that of Keeper of the Records? From Sir John Romilly's candid confession it would appear that the separation of the two offices may be easily effected. The Master of the Rolls is a judge, not always, as in the present case, possessed of literary acquirements and taste. What knowledge he has of the subject "he has usually acquired *after* he is made Master of the Rolls; no doubt the person he principally relies upon is the Deputy Keeper"—very much as if Nelson had commenced to study seamanship after he had hoisted his pennant, or as if the Duke of Wellington had commenced to learn battalion drill after he had received his marshal's bâton. The Deputy Keeper of the Rolls declared it to be absolutely necessary for the Master of the Rolls to possess a great knowledge of the history of this country and of the history of Europe generally, and that there is no special reason why the two offices should be combined. We have seen that the business of the Keeper of the Records is mere formality and routine, with, perhaps, the occasional exercise of discretion. But the keepership of the national records, every one must feel, would have been an office which Lord Macaulay would have filled, and Earl Stanhope would fill, with peculiar fitness and eminent advantage to the public. It is true that the present office is filled without cost to the public, but it may be questioned if that is wise economy.

We do not desire to hold up France as an example to copy in this respect, but there can be no harm in learning how she preserves her national records. The budget for the present year provides £7,260 for the custody of the Archives Imperiales, including a Director-General, at £600 a year, with twenty-seven subordinate *employés* and servants, and £600 for works, fac-similes of Carolingian documents, casts of seals, purchase of portfolios, binding, and publication of calendars. Supposing the separation were effected, there need be no additional cost to the nation, except the salary—perhaps £1,000 a year—of the Lord Keeper of the National Records. At all events, if it were done, there would be an end to the opposition of Sir John Romilly to the concentration of the law courts—which it would be cheap to buy off at larger prices—and he would have no cause to fear encroachments on his vacation amusements.

There remains but two grounds to be examined—the propriety of appropriating two funds, amounting to £1,400,000, at the disposal of the Court of Chancery, and the merits of the two sites proposed.

With respect to the fund, as that was made the *cheval de bataille* of the obstructionists last session, we may be permitted to recapitulate the facts of the case, in order that they may be distinct and prominent to the reader's mind. There are at present two funds vested in the Chancery Accountant-General—the surplus Interest Fund of £1,290,000, and the surplus Suitors' Fee Fund of £200,000—which have accrued from investments, made by order of the Court, of moneys paid into it which were the subjects of suits. It would be a repetition of what has appeared in previous numbers to explain how the fund has accumulated. All that is necessary for present purposes is to know that it is the surplus of unappropriated fees in days gone by; that "former suitors were not entitled to it; and that it does not belong to suitors at the present moment." Were the fund applied as proposed, the maximum charge that could be thrown on public taxes would be £35,000; but it by no means follows that this sum will ever have to be borne by the Exchequer, seeing that last year the Exchequer received £34,000 surplus Court fees. On the other hand, the saving that would result from the concentration scheme being carried out by capitalising the rents saved and the value of sites would be £500,000; so that the useful application of "nobody's money," instead of allowing it to be idle, like the talents of the slothful servant, will quicken and cheapen the administration of justice, relieve the national exchequer from no inconsiderable burden, and effect a great moral, social, sanitary, and architectural improvement in the metropolis.

Of the two sites proposed for the Concentrated Courts of Law, it has been sought by the *Times* to obtain a decision in favour of the centre of Lincoln's-inn-fields over Carey-street, on the ground that it will cost nothing, whereas the Carey-street site will cost some £600,000. There never was a greater misapprehension, and if we can show that Lincoln's-inn-fields, as compared with Carey-street, will cost as much, and, perhaps, more, in the long run, we are justified in claiming the verdict in favour of the latter. On this point there is no better authority than Mr. Harvey Gem, the deputed representative of the freeholders of Lincoln's-inn-fields to offer the gardens as a site on certain conditions. Now these conditions, upon the fulfilment of which the site would be given inside the gardens, will entail an enormous outlay. For they required the construction of a thoroughfare direct from Holborn to the Strand, a continuation of Serle-street into the Strand, the formation of a great central thoroughfare running into Carey-street, and additional new streets into the Fields from Holborn and from the west. There was to be provided also a

new system of sewerage. Mr. Harvey Gem estimated before the Select Committee of last year that the Holborn and Strand thoroughfare, the continuation of Serle-street, the opening of Gate-street, and the widening of Little Queen-street, would cost £408,000, and with accessories rise to between £500,000 and £600,000. As for the cost of fulfilling the other conditions—the central thoroughfare and sewerage—that would be quite independent. It is, therefore, the same thing as if Mr. Harvey Gem and the freeholders asked upwards of half a million for 3½ acres in the midst of Lincoln's-inn-fields; and they officially declared that they would not consent to Parliament occupying the site unless this compensation were made. But this is not all; the area that would be conceded in the centre of the enclosure in return for this outlay would do no more than accommodate the Courts. The law offices would have to be left scattered about as they now are, or be built on a site purchased.

Mr. Harvey Gem—and in referring to him we do so for the sake of convenience, he being the organ of the advocates of the site—proposed to the Select Committee that the Courts should be put in the centre of the gardens—"then you may take the sides for your future legal structures, and make it the grand centre and square of the law." The ground for the depository of wills—one acre and a half—he said, should be on one side of the square, and another whole side of the square should be occupied with legal offices, while some court accommodation should be provided in Lincoln's-inn. For this purpose it would be necessary to purchase the houses on the north, west, and south sides—in fact, to purchase the property of those gentlemen who pretend to present the nation with a site for the Courts of Justice. Thus we have, first of all, a positive outlay of £600,000—there can be no error in taking the larger sum named—to make approaches; and the prices of the three sides of the square, which may amount, for aught the public has in the shape of security to the contrary, to any unknown quantity—to another half million, while the principle of concentration, for which all this outlay is to be incurred, will be violated by having the courts within the enclosure, the offices on the sides and in the inn—a makeshift which will involve an outlay for the purchase of sites to which no one can fix a limit.

On the other hand the Strand site, as it is distinctively called, and in favour of which the late Commission reported, will cost £678,044 from first to last, and that will be in some measure reduced by the reletting of frontages, and the proceeds of sales from old building materials. There can, consequently, be no question which is the cheapest, and, considering the requirements which both sites will have to satisfy, we are quite within the mark in saying that the acceptance of the site in Lincoln's-inn-fields as a present from the freeholders will entail an outlay upon the nation of twice the cost of the Strand site. Despite the adage about not looking a gift horse in the mouth, it is very needful to do so in the present case. Indeed, Mr. Harvey Gem frankly admitted the extra cost of the presented site over the purchased site, and sought to excuse it because "we should not look merely to cheapness; we should ascertain which is the best plan for the Courts, the public, and honour of the law, and the honour and convenience of the metropolis, and then see if it cannot be carried out. I do not think the public would grudge money well laid out for those purposes." It may be that a few lawyers entertain the delusion that expensiveness conduces to the honour of the law; but the public will most certainly grudge the unnecessary expenditure of half a million of money merely to procure honour for the law.

When we come to consider the accommodation of the respective areas, it is difficult to understand how any one can for a moment entertain the proposition of employing Lincoln's-inn-fields. The utmost that will be given is 3½ acres—as we have seen, quite inadequate to the requirements of the occasion. The Strand site contains 7½ acres, or more than double that area, and will not absolutely require the construction of new approaches; it is desirable they should be made when so admirable an opportunity occurs, not so much to afford access to the Courts as to supply new channels for traffic, especially one going north and south, and the widening of the Strand by removing Holywell-street. Mr. Abrahams, who was examined before the Select Committee that sat last year, and whose experience as an architect in the purchase of property and erection of buildings in London extends over a period of forty years, stated that he knew of no property equal in extent which can be so cheaply purchased. It is singularly economical from the fact that it is not only quadrangular in form, but it is also nearly equilateral and of great depth taken from north to south, so that there will be only one line of goodwill with a large mass of inexpensive property to be taken. In no part of London can an area of such extent be bought without some serious impediment from existing factories or public buildings.

The advantages that would result to society, public health, and morality, and to the architectural appearance of the metropolis, came out strongly in evidence. The sanitary character of the site is very bad, though less than it would be were it not mitigated by currents of fresh air brought up by the tides. Yet "it is almost impossible to re-

main for any length of time in some parts, the stench is so dreadful. The condition of the people is terrible; the vice and wretchedness in the young, the decrepitude in those of middle age, and the dreadful condition of those in premature old age, are appalling." Few of the inhabitants are workpeople, in the general acceptance of the term; they are costermongers, washerwomen, and sweeps—"in fact, the most extraordinary combination of the most unfortunate characters in the metropolis." During his survey Mr. Abrahams was attacked, and had a very narrow escape of being robbed near Plough-court. Shire-lane is the most infamous locality in London, and contains some of the worst houses; almost every one is more or less badly occupied. The courts and alleys which cover the site are built in contradiction of all modern legislation on the subject of buildings, since they have no through drafts. They are *culs-de-sac* of the worst possible description, and have no system of drainage. If these characters are expelled from the locality, they will go somewhere else; but, as Mr. Abrahams remarked with great truth and force, they would not be able to congregate as they do now in this neighbourhood; they would be diffused through society, and would not have the same bad effect when separated as they have when in combination. Vice reacts from one individual to another, and intensifies; the moral corruption increases proportionately to the density of the population.

With these facts before the public it is to be hoped that the delusions which led to a preference being given to the centre of Lincoln's-inn-fields for the site of the law courts will be dispelled, and that the unanimous recommendation of the Commission, as well as of the Select Committee, will be accepted.

"THE END OF A FRAY FITS A DULL FIGHTER."

MR. HALL, the conductor of the *Art Journal*, has recently snatched an opportunity, and relieved his overburdened mind of its congested discontents. At the ordinary meeting to distribute the prizes of the Architectural Museum, reported in our last issue, Mr. Hall found an audience assembled, and, being primed by the letter of "an Architect," published in the current number of the *Journal*, must needs deliver a volley, "in King Cambyzes' vein," in the very stronghold of the enemy. The Department of Science and Art, its officers, and all appertaining to it or them, were peppered with his anger. But the full force of his denunciation was reserved for their Gargantuan creation, which is now being fed with all the best things of the world. His reason for being so pot-valiant was, that the "architectural journals had been silent" on the subject; so, with a fresh wound in the dead Hotspur's thigh, he "looks to be either earl or duke I can assure you." We should have thought that the very fact of the Architectural Museum holding its meetings, by courtesy, at South Kensington, would have spared them such an attack within their own walls, and the meeting from such an unexpected and unbecoming exhibition. There was plenty of scope for a "fluent orator" in the business for which the audience was especially assembled. The chairman attempted to call Mr. Hall back from his wandering flight, but to no purpose. He again broke—

"Into the woman's mood,
Tying his ear to no tongue but his own."

He rolled his heavy sentences, and would fain have had his hearers believe that Zeus spake. The "boilers," however, did not collapse; Mr. Cole was not carbonised; and Captain Fowke subsequently took his customary gallop without dread of any consequent mishap to the gigantic shed. "A plague on all cowards; is there no virtue extant?" said Sir John Falstaff; and Mr. Hall paraphrased the well-known exclamation in his outspoken peroration. If the use of pointed weapons constitutes a warrior, Mr. Hall should kneel, to rise again Sir Samuel. He bristled with them like the fretful porcupine. It is true his opponents were not in sight to awe him into propriety, and that he had not so disposed of them as to account for their absence. This, perhaps, made his courage conspicuous, even as the red coat of the soldier stands prominently out amidst a crowd of soberly-clad gentlemen. In their presence he, perchance, might have "roared as gently as a sucking dove."

We have no inclination to defend the objects of Mr. Hall's attack; they are perhaps indefensible; but we maintain that the meeting was neither the time nor place to make it, and we are indisposed to accept Mr. Hall's self-appointed championship of architecture. Some good reason had to be furnished why he, above all others, should so singularly parade himself. He gave "the silence of the architectural journals." Even if we had been silent—which we deny—his display would have been as useless as it was, under the circumstances, unwarranted. Whilst the Exhibition was being hatched, Mr. Hall might have perceived who sat brooding on the nest. It is vain to bestir himself now, when the monster is beyond his reach. The Architectural Museum was not thrust forth to make space for the ungainly creation. It has gained strength, size, and vigour at South Kensington, and common gratitude might reasonably have been expected from a promoter and guardian of it, in a meeting which testified to its vitality. Mr. Beresford Hope, we have no doubt, admires the building as little as Mr. Hall or we do, but he had the good taste to be silent on the subject when speaking at South Kensington.

ton to the meeting over which he presided. Periodically, like all other journals, we have noticed the Exhibition building; we have found fault with it where we deemed it defective; we have not hesitated to praise any portion which we considered fairly deserved approval. We battled against the appointment of a military engineer upon a building which foreigners might consider a mark of architectural progress. We published the opinions of the presidents of the Architectural Societies, but, spite of our and their opinions, the building was erected. We certainly did not think it necessary to drag personalities into the contest, or to impregnate every article we wrote with our dislike to the Exhibition building. Our contemporary, the *Builder*, has acted in a somewhat similar spirit. We may be guilty of "moral and mental cowardice," because we cannot "take it upon our death that we gave him that wound in the thigh." We must, however, have other proof of our tame submission than Mr. Hall's recent irascible eruptions, which, to say the most of them, appear so late in the day that even his opponents can afford to smile silently at his own mention of his prowess.

We will not flutter Mr. Hall so much as to say that if he had taken part with us at the beginning of the fray our defeat would have been more glorious, but he might, in such case, have learnt to qualify his present language. It would have caused him to refrain from firing in to his friends in consequence of the insensibility of his enemies to his onslaught. He would, moreover, have known that a continuous carping at a building which was a settled fact would have laid us open to the charge of professional jealousy and disappointment, and that brave words were wasted when the contract was signed, and Messrs. Kelk and Lucas' staff were in possession of the ground. The professional journals would certainly not be enriched by Mr. Hall's sanction of their proceedings, and they are consequently but little affected by his censure. We are only sorry that he considers it becoming to leave his editorial chair and proclaim his individuality, and that he, in so doing, tends to bring discredit upon a profession which neither requires nor accepts his ill-timed advocacy.

Mr. Hall, in his journal, has done good service to the arts as well as to the publishers. We have recognised it with pleasure, but we think he showed neither wisdom nor prudence when he left his sphere of hidden usefulness to seek a little popularity. The *Art Journal* has ever been one of the main stimulants to International Exhibitions, and to the promotion of art-manufactures. The scheme which it ably and persistently supported may, perchance, have been carried by other hands far beyond him. They have met rewards; Felix Summerly has become a Companion of the Bath; Mr. Wentworth Dilke will leave a title to his posterity; other fellow workers of former days have been more or less dignified, but Mr. Hall has only been honoured with permission to engrave the Queen's pictures. It is not unlikely, therefore, that a little mortified vanity and nipped ambition may be at the root of his opposition to the present officers of the Department of Science and Art. We do not affirm such to be the case, but his actions engender the suspicion. It cannot be in sheer wantonness that the gentle zephyr of Spring has become now a rude angry Boreas.

The *Art Journal* recently announced its intention to devote more consideration than it had heretofore shown to architecture. There was certainly a gap to be filled up in a journal which professed to represent the arts. It begins in no amiable fashion, plunging pell-mell into friends and foes alike. If this be a sample of its consideration we could well be rid of it, and think it might, with greater satisfaction to its readers, pursue its journeys "up the Hudson," and leave English architecture and architects to be defended by those who can do so with becoming knowledge, dignity, and prudence.

THE ALBERT MEMORIAL.

LAST Friday the Design Committee held another conference in the Council-chamber of the Fine Arts Commission at the Palace of Westminster. Mr. Marshall, the chairman of the Ross of Mull Granite Company, attended and gave additional information respecting the block of red granite, about 106 feet in length, and some 12 feet square on an average, which had been discovered in an unleased quarry there belonging to the Duke of Argyll, and to which the attention of the committee had been previously directed as suitable for the intended memorial. He produced a diagram of the stone and plans prepared by Captain Moorsom, the company's engineer, showing its position and outline, and that it is about 500 yards distant from the sea. He explained that it had been uncovered to the extent of about 106 feet, and that as both its ends are still embedded, it may be found to be of even a greater available length than that mentioned.

The committee have also received communications from the owners and lessees of other granite quarries in the kingdom, especially one from Lord Palmouth, who has made an offer in the event of his quarries of serpentine being found to contain a single stone of sufficient dimensions. It is understood that the Duke of Argyll has intimated to the committee his desire to present them with the stone to which reference has been made on his property in the Island of Mull. The Granite Company, who lease some of the adjacent quarries to that in which it lies, have given in two estimates—one of £25,000 as the probable cost of quarrying the stone, shaping and polishing it on the spot, and removing it to the water's edge; the other of £15,000 for those operations, less the polishing, which in that case would be done in London. Mr. Marshall calculated that the interval required for the operations covered by the first estimate would extend from the present time to the summer of 1863.

SURVEY OF SCOTLAND.—A Parliamentary return gives the following account of money voted and expended on the survey of Scotland during the three years mentioned:—1858-9, voted, £32,000, expended £32,770 13s. 9d.; 1859-60, voted £32,000, expended £31,830 1s. 11d.; 1860-61, voted £30,500, expended £25,069 14s. 2d.; 1861-2, voted £22,000, expended £22,000.

THE DICTIONARY OF ARCHITECTURE.

IT is very much to be regretted that architects do not, one and all, step forward, and by an annual subscription of one guinea each to the funds of the Architectural Publication Society, secure the speedy completion of the Society's "Dictionary of Architecture," than which, perhaps, no one can point out a more valuable acquisition to architectural literature. Apart from the work now in course of publication, it must be remembered that we really have no modern comprehensive dictionary of architecture in the English language, and there certainly cannot be an architect in practice who does not feel the want of a reliable authority to which he may turn at need. Such a work, when completed, will be the "Dictionary of Architecture." Not compiled and published, it must be remembered, with any idea of pecuniary gain. The whole of the funds collected are absorbed by, and simply present themselves in another form in, its pages, while the Committee work hard and *con amore* to maintain that character of authority and completeness which, doubtless, it was at first felt that the work should possess. And yet, not overlooking, however, the indefatigable perseverance and labours of the honorary secretary, Mr. Wyatt Papworth, there can be no doubt that the profession has behaved very cordily with regard to the Dictionary. We have now before us, as just issued, Part No. 1 for the year 1860. As we understand it, this is from no fault of the Committee. It arises simply from the fact that the amount of matter issued depends on the amount received by way of subscriptions. No doubt when the work was commenced many held back, waiting to see it and to judge for themselves if they would subscribe or not. Time soon passes onward, and now those who, seeing the high value of the book, may wish to subscribe and take up the early parts, find that it involves an expenditure of some ten or eleven guineas, there is a little more hesitation and "thinking about it," and another year's publication is soon added to the list. Really, this difficulty is worth the careful consideration of the Committee—indeed of the Society—for at the present rate of progress those who wrote under letter A can hardly hope to contribute under Z. Bearing in mind how desirable it is that such a work should be completed as speedily as may be consistent with its present accuracy and comprehensiveness. Would it not be expedient to offer some facilities to new subscribers for the completion of the sets? A reduced price for early parts seems the most obvious course, and we cannot think that the old subscribers would object to allow this advantage to new comers if they hoped by it to secure double the number of subscribers, and the consequent completion of the work in less than half the time it will otherwise take. We are quite certain, and so, no doubt, are the Committee, that if the difficulty as to the back parts could be surmounted, a large accession of subscribers would follow. The work is now well known; we ourselves have taken occasion more than once to urge its claims to the support of the profession, and never did so more earnestly than we now do, after an attentive examination of the part before us.

As examples of the manner in which the subjects are treated, we transfer to our pages portions of the articles "Fixture" and "Foundation." The part comprises, in the letter F, "Felin" to "Fynol."

FIXTURE.

This term is frequently used to signify articles of a personal nature which have been affixed to land, whether removable or not; and sometimes expressly to denote articles which are not by law removable when once attached to the freehold: but the term, in its correct legal sense, signifies such things of a personal nature as have been annexed to the realty, and which may be afterwards severed or removed by the party who annexed them, or his personal representatives, against the will of the owner of the freehold. When the article is not so removable, it is, to all intents and purposes, part of the freehold, and subject to the rules and incidents of real property. An "ordynance of the Cite (of London, 1365-6) for Tenaunty of Houses what thingis they shall not remove at theyr departinge," is given in Arnold's "Chronicle," 4to., London, 1811, p. 137.

The principle involved in the question as to what is *prima facie* a landlord's and what is a tenant's fixture, may be briefly stated thus, viz., what is necessary for tenable occupation belongs to the landlord, what is desirable for simply personal and individual convenience belongs to the tenant; with the increase, therefore, of luxury and comfort, the range of what are considered landlord's fixtures is constantly increased, and that of the tenant's decreased; thus, originally glass windows were *prima facie* tenant's fixtures, now stoves and bells are *prima facie* landlord's fixtures.

Fixtures are of two kinds.—1. Trade fixtures, those articles which a tenant fixes for the purposes of his trade or business. 2. Domestic fixtures, those which he fixes for domestic comfort or convenience, or for purposes of ornament. As regards the first branch, the law seems to hold that fixtures can only be removed when they are part of the trade rather than of the land, and may be carried away as more appropriate to the former than to the latter. Thus a nursery-man may remove his greenhouses, hothouses, &c., and a soap-boiler his vats and coppers; and thus a steam-engine to work a colliery, a mill to make cider, sheds to manufacture bricks and tiles, are all held to be removable, though clearly affixed to the freehold. The law seems to regard them as the tools or implements necessary to a man to carry on his trade, and as things which he could remove to and use in another spot. But such things as are put up by a tenant as a means of improving the use of land rather than that of purposes of trade, are not removable. Thus, though a tenant may take away a cider mill (3 Atk., 13), he cannot remove a beast-house, tool-house, waggon-house, &c. (Elwes and Mawe, 3 East., 38.) Gardeners, &c., may remove shrubs, &c., planted for the purposes of sale, but not to pull up plants which will entail malicious injury to the reversioner, with little or no good to themselves. Gibbons (p. 31) has summed up the matter with a well-known legal maxim: "It is only permitted to remove such things because necessary for their trade, and *cessant ratiō cessat ipso iure*."

With regard to the second class, domestic fixtures, the incidents appear to be these:—1. They must be fixed to be freehold, not slightly, like carpets nailed to a floor, or mirrors fastened up by screws, but so fixed to the house as to be part thereof. 2. That they have been so fixed by the tenant. 3. That they be useful in the occupation of the house, or ornamental thereto. And 4. That they are

capable of being removed without any substantial injury to the house. As these are questions of fact, scarcely two cases may be said to be alike, and the rights of the parties must be left to be decided more as regards the contract of agreement between landlord and tenant (either expressed or implied), and the equity of the transaction, than on dry legal maxims.

FOUNDATION.

For the purposes of classification, the various descriptions of strata available for the foundations of a wall may be described as follows:—1st. solid rock; 2nd. Incompressible but movable strata, such as sand or gravel, when free from water; 3rd. the same strata when charged with water; 4th. clays or loams in their various states; 5th. compressible strata, such as alluvial muds, peaty lands, or running sands, chalk footings.

1st. Solid rock should be made, as nearly as possible, level throughout. If there should be any great irregularities in the natural surface, compensation may be made for them by the use of concrete, of solid rough masonry, or of brickwork; it being always borne in mind that all these materials are, for a time, liable to compression under an instant load. A rock may be considered to have sufficient power of resistance when it bears a weight of 100 lbs. per foot superficial, without exhibiting any signs of compression. The upper and more weather-worn beds of the limestones, sandstones, shales, schists, and sometimes even of the granite rocks, are too much fissured to allow of their being trusted as foundations, without the introduction of some mode of distributing the weight over a large area; and they, therefore, require to be treated in the same manner as the strata next to be noticed. But the solid beds of any of those formations may, without hesitation, be used as foundations without any intermediate works.

2nd. Strata, such as gravel or sand, free from water, and sensibly horizontal to a considerable distance from the extreme edge of the building proposed to be erected upon them, are, for all practical purposes, as incompressible as rock itself; but as the small particles of which they are composed are free to move under unevenly distributed weights, it is almost always desirable to introduce between the footings and the gravel a bed of concrete, or some analogous means of effecting the desired object of distributing the weight over a large area. If the gravel and sand, however, should be prevented from spreading laterally, there can be no objection to founding an ordinary building at once upon them; but in such cases it is essential to inquire beforehand whether there be any probability of a change at any future period in the condition of the strata.—CONCRETE.

3rd. When the gravel and sand are charged with water, it is absolutely necessary to resort to some artificial method of forming the foundations. With gravels there is less danger from displacement of the materials themselves than with sands of a fine and even character; because the latter act the same as dense fluids, and yield to the pressure of any body of a greater specific gravity than themselves, if there should be any means provided for their escape laterally.

When a building has to be founded upon fine sands charged with water, the first operation to insure the stability of the work is to surround the intended site by an enclosure, composed either of whole or of sheet piles, or of iron sheet piles, in such a manner as to isolate that portion of the stratum from the surrounding sands. This enclosure must be carried down to the solid substratum under the watery sands, so as to prevent the latter from slipping away under the outer edges; and great precautions must be taken to prevent the enclosure from bursting under the action of the load. If these objects can be effected (and there would be no difficulty in so doing, unless the sands were of considerable thickness), the whole of the enclosed surface may be rendered fit to receive the building by being covered with a uniform bed of concrete when the weight of the building is not very great, or the portions of the surface immediately under the seats of the walls to be erected may be adapted to receive the latter by the use of piles supporting a wooden or a stone platform, upon which the lower courses of the masonry are laid.

In the cases of lock gates, foundations for the piers of bridges, or analogous works, it is customary to drive piles all over the surface (an operation which, if carefully performed by driving them, beginning from the exterior and working towards the centre, tends to consolidate the foundations by compressing the ground itself); and at times it may even be desirable to act in the same manner with other buildings, as dock warehouses, &c.; for ordinary civil constructions, however, it will suffice to pile simply under the walls.—PILE AND PILING.

4th. Clays and loams in their native state are, for all practical purposes, incompressible, and a building may be erected upon them without the interposition of concrete or of any artificial foundation, so long as the clays and loams are prevented from spreading or moving laterally, and provided their natural surfaces have been attained. The danger to be apprehended from clay subsoils is in the fact that beds of sand are often intercalated between the principal beds of clay, and if, under such circumstances, the edges of the sands should be laid bare at a lower level, and water should get into them, they would be likely to slip under the action of a heavy weight. Beds of clay near the surface sometimes become dry in unusual seasons of drought, and in buildings constructed without reference to their condition serious settlements invariably follow. Upon a hill side it becomes necessary to carry the foundations upon a clay or loam to such a depth as to prevent any lateral displacement of the upper beds. At present it often happens that unnecessary expense is incurred in the execution of concrete foundations on sands, loams, and clays, in flat horizontal plans, where, in fact, all that is absolutely necessary is to carry the walling through any vegetable soil or made earth to the undisturbed ground, and to prevent water from penetrating between the bottom of the walling and the seat upon which it rests. Even the Oxford and London blue clays, if occurring in a plain, would be found incompressible under a load of 50 lbs. to the foot superficial, but they have occasionally been known to slip when their surfaces have formed an angle of 1 in 10 to the horizontal line, so that it would be advisable in the erection of a building of any importance to consider the line of stability of these strata to be at least 1 in 12, and to carry down the foundations accordingly, even when they are dry.

If the clays and loams should, however, be covered with water flowing over their surfaces, the source of that water should at once be intercepted by any of the processes adopted for dealing with subterranean watercourses. It is desirable in all cases of building on wet clay to surround the footings by close piling, and to intercept the passage of water beneath their surface, and, at any rate, to insure the uniform and equal compression of the subsoil immediately under the footings by isolating it from that surrounding it. If, by reason of any local circumstances, there should flow over the top of a bed of clay or loam a spring so powerful as not to be susceptible of being diverted, the foundations must be supported upon piles, or cylinders must be employed.

5th. Compressible strata, such as peat, alluvial lands, sands intercalated with

peaty beds, and running sands, are the most difficult to be rendered fit to serve as foundations. If it should be possible to form round the position intended to be occupied a water-tight enclosure or a coffer-dam, it would certainly be advisable to throw out the whole of the materials so enclosed, and to carry the foundation down to the solid substratum. But it frequently happens that the thickness of the class of strata thus described is so great that the expense of making a coffer-dam could not be incurred; in this case piles or cylinders must be used, according to the importance of the building, especially if the compressible strata under consideration should be liable to move laterally. Instances exist in which the soft alluvial muds are so thick that it is impossible to reach their supporting strata by any of the ordinary processes; thus, in the case of one of the new railway bridges upon the Loire, it was found impossible to reach a solid bottom even by the use of piles scarped together so as to form a length of about 120 feet. At L'Orient, again, the semi-fluid mud is of such an indefinite depth that no piles can reach the bottom. The method adopted in both these cases has been to surround the intended position by a close piled sheeting, and then to stud the enclosed space by numerous piles, in such a manner as to compress the mud itself as far as possible. The descent of the piles is, under these circumstances, simply resisted by the friction upon their sides; and at L'Orient, another element of resistance was obtained by driving the piles with the butt end downwards. All such foundations must, however skilfully executed, be considered to be unsatisfactory, and they must constantly be liable to subsidence and to lateral displacement. The most important precautions to be taken with them are, 1st, to insure a permanently tight enclosure; 2nd, to insure a firm even platform all over the enclosed surface, by use of timber and of concrete; and 3rd, to insure the distribution of the superincumbent weight over the whole surface of the platform, by the use of wide footings and of inverts. Sir R. Smirke executed successfully some foundations on the soft alluvial mud of the Thames, by the use of an exceedingly thick bed of concrete; but in these instances the mud was so confined by some ancient river walls, as not to be able to spread laterally.

On peaty subsoils, the principal danger arises from the unequal compression to which they may be, or become, exposed; for if a building were erected upon a platform resting upon peat, and the weight of the building were evenly distributed over its surface, it would, in all probability, subside evenly until it had attained the degree of compression required to resist the load. But if a greater load than that of the building were subsequently to be laid on the peat by the side of the original load, the peat would be compressed under the new effort, possibly to such an extent as to overthrow the first building. In fact, if some means of carrying the wall of a building down to the solid substratum beneath a peat bed be not resorted to, or the space between the footings and the solid substratum be not filled up with concrete, it is indispensably necessary that the whole of the seating of the building should be isolated from the surrounding ground by means of close sheet piling, so as to prevent any lateral movement.

In the case of foundations upon running sands, there is no choice left to the architect beyond that of piles or of cylinders, to be subsequently filled in with concrete. In both cases great precautions must be taken to insure the connection between the artificial foundations and the resisting substrata, and to protect them from any tendency to lateral displacement by cross-bracing, if possible, or by upper platforms. The load of a building must, in fact, never be brought upon a running sand, however it may be temporarily enclosed; and the artificial foundations used must not be exposed to turn upon their edges under the action of any movement in the sands themselves.—COMPRESSION; CYLINDER; PILING-IN.

The introduction of Mitchell's screw piles has greatly facilitated the execution of foundations in certain uniformly resisting strata.

SOCIETY OF ANTIQUARIES.

A Tameeting of the Society of Antiquaries, held on the 6th inst., Earl STANHOPE, President, in the chair, Mr. Cornelius Nicholson and Mr. G. S. Butler were elected Fellows of the Society.

Mr. W. H. HART exhibited and presented four ancient documents: a deed concerning the Manor of Stapleford, Essex, temp. Edward IV.; two rental rolls of Kettleberston and Tittenhanger Manors, respectively; and a parchment volume of the nature of those referred to in printed collections as "Ancient Statutes," temp. Edward I.

Mr. BERAH BOTFIELD, M.P., presented a photograph of some pottery found at Wroxeter, and a "Plan of the Roman Defences of Uriconium."

In connection with this plan some remarks by Dr. Johnson, together with some other illustrations, were communicated to the Society through Mr. J. H. PARKER.

Mr. FRANKS, Director, exhibited some specimens of Mediæval jugs, and made some remarks on the slab of Maude de Gournay.

Mr. CORNELIUS NICHOLSON communicated an account of Brougham Castle.

METROPOLITAN BOARD OF WORKS.

AT the usual weekly meeting of this body, held on Friday last, J. THWAITES, Esq., the Chairman, presiding, the Works and Improvements Committee recommended that the Board contribute one-third of the cost of effecting a public improvement in Throgmorton-street, to be carried out by the Commissioners of Sewers of the City of London, by setting back the house, No. 39, in that street, as shown upon the plan produced to the Committee, estimated at £916, exclusive of professional charges; such contribution not to exceed £305 6s. 8d., and that such amount be paid to the Commissioners of Sewers of the City of London, on a certificate from the architect of this Board of the completion of the work.—Agreed to. That the Board do contribute one-half of the cost of effecting a public improvement in High-street, Kensington, to be carried out by the Vestry of Kensington, by widening the same as shown on the plan produced to the Committee, estimated at £500, such contribution not to exceed £250; and that such amount be paid to the Vestry of Kensington on a certificate from the architect of this Board of the completion of the work.—Agreed to.

THE ROYAL SCOTTISH ACADEMY.—The first *conversazione* of the season was given by the president and members of the Royal Scottish Academy on the 12th inst., in the National Gallery at Edinburgh. The proceedings were attended with marked success. In the course of the evening Professor Blackie delivered a lecture on "The Acropolis of Athens, the Erechtheum, and the Parthenon."

THE ALBERT OBELISK.

WHEN it was sought by well-meaning philanthropists to divert the large and still-flowing tribute of a nation's gratitude to its Prince into innumerable petty channels, where, by wide spreading, it would have dissolved to naught, the Queen deprived even disappointment of its customary pang by the tender expression of her wish, and strengthened by her wise decision the position of those who desired to avoid making the Prince Consort's monument a socially remunerative memorial. In deciding, however, in favour of an erection of a purely monumental character, and in mentioning an obelisk as the form most likely to meet with public approval, Her Majesty made an express provision that it "should be on a scale of sufficient grandeur." The Committee since then appointed by the Queen to determine the several details, have necessarily first directed their attention to the materials for the central feature of their work. That the British Islands possessed granite quarries from which monoliths might be cut equal in size to any which were ever reared was never doubted, although the absence of any standing block had somewhat obscured the fact. The Committee's investigations have now again made it manifest; whether we desire red granite or grey we can have it, but the gigantic cost which a successful rivalry of ancient Egypt and modern Rome must of necessity entail, looms up in gigantic proportions commensurate with the work, and threatens to defeat our object. The owners of the several quarries meet the Committee with characteristic liberality, but their generous offers as regards the mere material lessens but in a trifling degree the total cost. There is no doubt that in the nineteenth century, with scientific appliances and engineering skill, we can do with marvellous facility what our painted ancestors were able to do without such assistance on Salisbury Plain, but the question arises whether it be wise to waste our powers only to excite the lowest feeling which can be excited in the minds of spectators. In the absence of capacity for making better impressions, the men of old barbarous times excited the simple wonder of the people. By an extravagant expenditure of muscle they made up for their deficiency of mind; it should, however, be remembered that a head painted by Raffaele, or carved by Donatello, is worth, in point of art, fifty Stonehenges; that one sculptured metope from Minerva's Temple, weighed in an intellectual scale, makes even the Sphinx kick the beam. We should like the Albert Memorial to be an intellectual rather than a muscular monument—to kindle something beyond the vulgar sentiment of wonder.

In directing attention to this especial feature, we emphatically repudiate any thought of questioning the wisdom of the Queen's decision. The stipulation with which it was accompanied, and the invitation for remarks on the subject from the Select Committee, justify our course and clear it from anything approaching an objective colour.

Immediately that her Majesty settled upon an obelisk people ran away with the idea that it must necessarily be monolithic. This necessity we take the liberty of questioning. It would, of course, in that case possess a certain value on account of its rarity, as all things do, from a stuffed gorilla to the Koh-i-noor, but for its intended purpose it would have no additional value at all commensurate with the cost. The expense of transporting the huge block would alone absorb more than the total amount of the subscription now raised. To guide us in this estimate we have but one example to refer to—that of the obelisk of Luxor, now in the Place de la Concorde, at Paris. Fontana's account of the expenditure connected with that in the Piazza di San Pietro, in consequence of the difference in the value of money and the improved mechanical means at our disposal, will not help us to an approximately accurate solution of the problem. The cost, then, of the French obelisk was no less than £80,000, instead of £25,000 or £30,000, as was recently stated in a newspaper. This, of course, included its transport from the banks of the Nile, instead of from the Western Islands; but it should be remembered that no land carriage had to be provided for it. Once shipped, it was brought to the very spot where it was erected. In the present case we should certainly save a considerable portion of the sea journey, but at the most moderate calculation we could only land the block within two or three miles of its ultimate destination. Some portion of the difficulty in removing it from the Thames to Hyde-park may be calculated by simply conveying a pole of 100 feet in length along the intended route. Could all the corners be turned without demolishing houses and adding to the expense? Again, the French obelisk is 72 feet high, and weighed a little over 200 tons. The Albert obelisk, at the most moderate computation, if, as is proposed, 100 feet high and of proportionate diameter, would not weigh a pound less than 500 tons. If the reader will but consider the effect of such a ponderous mass upon our roadways, and, moreover, upon our three or four brick rims of arched sewers, he may be led to an adequate idea of the fearfully expensive nature, if not of the absolute folly of the proposed undertaking.

That our architects and engineers could accomplish the task we have no manner of doubt; but for what purpose would the great sacrifice be made? Assuredly not to honour the lamented Prince, but to emulate the absurd vanity of the Cæsars, the Popes, and the French nation.

To return for a moment to the Paris obelisk. The pedestal is a single block of granite, and weighs itself upwards of 100 tons. If the Albert obelisk is to be a monolith, a corresponding monolith will be needed for its pedestal, for if that can be built up in blocks of moderate size, the folly of insisting on the monolithic character of the superstructure is only more conspicuously apparent. The sense of durability assumed as belonging to the monolithic obelisk would be impaired by its standing upon a pedestal without that manifest attribute. If the relative proportions of the obelisks are doubled, those of their substructures must equally be so; and as we know

the exact cost of the one, we cannot go blindly to our work of raising the other.

We admit that a monolithic is theoretically more durable than a built obelisk, but as both would, in all probability—their foundations being good—stand for thousands of years, they may almost be considered of equal value. Who that looks upon the Saint John Lateran obelisk notices that it is in three pieces? Or who stays a minute longer in admiration before that in front of St. Peter's on account of its being a perfect unbroken block? By being quarried in one block, the Albert Monument might become the most gigantic of laborious curiosities, and take highest rank in that class which embraces the Chinese balls carved in a single piece of ivory, one within the other; but if its height were treble that contemplated, it would still have a low character—one unworthy of the Prince who worked incessantly to elevate the people, and to instil into them better taste than such a monument would denote.

The *Times* compares a monolithic obelisk to a "church spire carved out of one stone, and raised in the mass." We accept willingly the comparison, but we could scarcely approve of an architect's practice, who, with sufficient knowledge of mechanics to construct a spire in that manner, possessed also the folly to do it. The leading journal makes this comparison in order to induce the committees for local memorials to abandon their projects and devote their funds to the London monument. We believe that no single one will respond to the appeal made to them. We might as well ask that no ordinarily constructed spires should be attached to country churches, in order that we in London might build one in an unreasonably extraordinary fashion.

England may not be the country for memorials, but that is no reason why, when a good opportunity presents itself, we should not endeavour to wipe out this reproach. A sneer at a local "statue faithfully copied from some well-known engraving" is particularly ungracious. Our sculptors, whether employed by Bath, Birmingham, or London, have all like facilities for reproducing the well-known and well-remembered head. The inscriptions in the country are not more likely to become more "smoky" or "dingy" than that in London. In fact, we should think just the contrary. It is not simply an "occasional visitor" who will look upon the provincial memorials, but the inhabitants—present and to come—who will have it associated for ever with their town, marking how they did their duty to the Prince who did his duty unto them. It is better that the memorials should be thus girdled by the feeling which caused their erection, than that they should be absorbed in the wasted expense of a gigantic monolith in or near Hyde-park.

We maintain that we should proceed in this matter irrespective of what strangers may think of us; find out the right track and pursue it steadfastly; but, even on the low consideration of a visitor's opinion, he would be more forcibly impressed with the loss felt by the nation in the Prince Consort's death, if, wherever he went throughout the length and breadth of England, in every town and hamlet, some record, even although it might be a "dingy, smoky inscription," a "statue copied from an engraving," or a "drinking fountain with inscription instead of text," met his eye, which told him that not only in London, but wherever the English tongue was spoken and English hearts beat, there was a common sense of grief for the Prince's death and of sympathy for our widowed Queen.

The reason given for asking our provincial committees to sacrifice their objects is that they may transfer the collected money to the London fund. We shall need, it is said, half as much as the cost of an iron-plated frigate to carry out the monolithic idea. The *Times* even estimates the weight of the monster at 1,000 tons. With its increased dimensions of 150 feet high and of proportionate width, it is not far wrong; but, with double the weight which we had calculated upon, the folly of such an undertaking is quintupled. If any real advance in art were gained by it—if it expressed, however slightly more, our gratitude to the deceased Prince, we should offer no objection to it. Even if it should be a "wonder of the world," what then? Would it compensate our provincial towns for the loss of those local memorials, which would "at least redeem them by a single object that carried them back to the past and reminded them of its greatness and its glory?" Would it be judicious to sink the money on the unseen and soon forgotten labour of transport, instead of investing it in sculptured works?

We decidedly think not. A much larger sum ought to be received for the London monument, and no doubt will eventually be obtained. The *Times* mentions three sources whence this additional sum may be expected—1. By subscriptions from the many substantial people and firms that have been biding their time. 2. By a Parliamentary grant; and 3. By the provincial towns throwing their subscriptions into the general fund. The second source is, of course, if possible, to be avoided; the third will, we think, be a vain expectation; and we are afraid even the first, although hoped for, may be long hoped for, if the monolithic obelisk of 1,000 tons' weight is pertinaciously adhered to. Much as we object to a utilitarian memorial, we would rather see the money thus expended than upon a transport ship and transport waggon.

But there is really no occasion for an appeal either to Government or the provincial committees, before we can think of something more than one of the starved columns, or forlorn statues, or prosaic institutions, in which the British nation has heretofore doled out its thanks to departed heroes and statesmen. We have only to dispense with the monolithic idea. We shall then save not only our streets, our sewers, and thousands of pounds, but great perplexity of brain. Let the monument be an obelisk, according to the Queen's and the nation's wish; but build it sensibly, instead of transporting it foolishly. Spend the money upon living

art, instead of upon dead labour. Rear a monument which shall tell an eloquent story to remotest ages, and not a senseless block, which will only kindle a kindred feeling in our posterity to that with which we now look upon the works of our painted ancestors.

A COMPARISON OF SOME OF THE DETAILS OF BUILDING ADOPTED IN ENGLAND, AND IN OTHER COUNTRIES.*

WITHIN the last three weeks my business avocations have called me into France, Belgium, and Holland; and although on previous occasions I had passed long periods of time in those countries, I was, on this one, more than usually impressed with the necessity, which all Englishmen must feel, of studying the habits of men working under the influence of modes of action different from those in which we ourselves have been educated, if we desired to retain our high position amongst the nations of the world. Very possibly the train of thought superinduced by the reflections connected with my lecture for this evening may have turned my attention with more than usual force to this subject; but there is so deep a moral lesson to be read by those who look a little below the surface in the histories of the three countries I have mentioned, that it behoves you, "foremen" amongst the workers, to derive all the benefit from it that you can. If you only learn this, that some good is to be found even amongst those whom Englishmen are too apt to regard as beneath themselves in intellectual rank, and that some of your own cherished habits and prejudices may be founded in error, you would do wisely to study the reasons which may have induced others to believe, and to act, otherwise than you are wont to do. For my own part, I believe that, even in matters of practical detail, we should do wisely to abandon some of our habits, and I, therefore, beg your impartial attention whilst I lay before you a short statement of the more obvious differences in the trades connected with house building as practised in England and on the Continent, from which we may learn a lesson—"one which may profit in the after time."

Now, in France, it happens that the bulk of the house construction is effected by the use of stone, instead of brick, for all external walling; and it is one of the artistic advantages of that country that the building stones there obtainable allow of the use of large ashlar blocks at a comparatively low cost. It is an old and very true saying, that "the class of materials generally used for buildings has a marked influence upon the character of the architecture adopted;" and certainly in those parts of France where freestones, yielding blocks of large dimensions are to be found, the architecture is of a bolder and of a more monumental character than it is in England, or even in the Flemish provinces, in Belgium or in Holland, where brickwork is almost exclusively used. This, perhaps, is more distinctly an architectural question, and so somewhat out of your province; but you may observe that the peculiar nature of the French stone has led to the use of a very different mode of handling it from the one prevalent here. Before describing this mode, I would observe that French masons are classed according to the description of work they are usually employed upon, either as "*maçons*" or "*limousins*,"—as we should say, as masons or wallers, for the word "*limousin*" is derived from the province of the same name, whence the best rubble wallers emigrate. The masons are subdivided into—first, the *appareilleur*, or the man who sets out the lines and makes the models, sets out the stone for the sawyers, and gives the general instructions—he is, in fact, the foreman; second, the mason, who roughs out the blocks; third, the *poseur*, or setter, who fixes them in the rough state—for it is to be observed that the mason only dresses the beds and joints, leaving the face rough; fourth, the *ravaleur*, or *tailleur de pierre*, who works off the face, and carves the various mouldings. Sometimes the mason also executes the rubble walls equally with the *limousin*; and if the rubble, instead of being random, be coursed and dressed, the mason only would be employed. He also executes what are known in France as the *legers ouvrages*, or the thin partition walls, the foundations of floors and ceilings, and the plasterer's work; indeed, in the centre of France there is no special trade of plasterer, and the mason combines the two trades we separate.

Now, the difference above alluded to in the mode of handling the building stones of France and of England consists in the fact that the French masons do not work their mouldings or decorations on the ground as we do, but they work them in place. This is easily done with the softer tertiary limestones of the Paris basin, and with the oolites of the north-west; but it is not quite so easily done with the upper oolites (of the Portland series), found near Boulogne and Dunkirk, or with the jurassic limestones of the valleys of the Seine and Rhone. Yet even in the latter districts the habit of finishing the work in place prevails, and I have also observed it to prevail in the north-west of Spain, where granite alone is used, and in Belgium, where the ashlar decorations are mostly executed in blue crystalline mountain limestone. I speak on this matter as an old mason, and I do not, therefore, hesitate to say that our neighbours' practice seems to me to be superior to our own, both economically and artistically, and I urge each of you as masons to examine the matter seriously. Our system is objectionable, firstly, because it is almost impossible to find two men who can work precisely alike from the same mould—one will set under, the other over; so that when a cornice, for instance, has to be placed, it is usually found that the "setter" is obliged to work off the edges of the stones, and thus the lines of the cornices are almost always irregular in an English building, and the separate mouldings do not meet truly. But in an artistic point of view the English system of finishing the detail of mason's work "on the banker" is objectionable, because the men who are so employed rarely have the opportunity of studying the optical effect of their own work, and thus they not only often waste labour by over-finishing, but also they neglect many little modes of securing effect which they would learn if they practised their handicraft under such conditions as allowed of their studying the influence of perspective and of reflected light. I myself firmly believe that much of the tameness and of the want of picturesque character in our modern English masonry is owing to our habit "of working under hand," and I suspect that its introduction here has only dated from the period when the Portland stone came generally into use in the metropolis, for many of the Medieval representations of building operations represent the masons of that period as working with the same description of tools which the French masons still use.

In bonding their work the French masons are by no means so careful as are our own, and they have a very sad trick of working off their beds and joints, so as, in fact, to leave the stones in the form of truncated pyramids. But they compensate for this, to a great extent, by the extremely careful way in which they make up their mortar, and in which they bed their work with it. There are, indeed, few things more surprising to a man who has studied the philosophy of lime than the way in which English builders misuse that important material, and this remark must be applied to our bricklayers, plasterers, and other tradesmen, quite as much as to our masons; and it is to be feared that the general employment of the quick setting Roman and Portland cements is leading us more and more to neglect the limes, which I believe will ultimately be found to be preferable to them, on the score of durability at least, when they are properly employed. This is a very wide subject, to which I may have again to return, if you would favour me by a hearing upon it; but I now confine myself to observing that all foreign mortar-masters attach extreme importance to the perfection of the primary slacking of the lime—that they ridicule the notion of using the lime "hot," that they are careful to insure an equal intermixture of the lime and the sand, preferring to effect that operation by hand labour, on the score of its securing a greater immunity from core—that they avoid excess of water, either in slacking the lime, or in subsequently making it up into mortar; they gauge stiff in fact—and that they take great care to counteract the absorption of the stones or bricks they use by watering them copiously. It is true that the cost of stonework in our country drives us to its use almost exclusively in the manner of a thin crust, backed up by brickwork; and that, therefore, in order to counteract the unequal compression of the two classes of materials, we are obliged to resort to the use of the rapidly setting and almost incompressible cements; but this is no excuse for the very slovenly way in which our workmen handle the limes they require for ordinary buildings, nor for many of the radically false practices they adopt. We have still much to learn from our French neighbours in the methods of working the natural hydraulic limes, and from the Dutch in the methods of employing mixtures of rich limes and pozzolanos; but the great secret of the superiority of foreigners in these matters lies, after all, in the greater amount of time and care they bestow upon them to what we do, and

in their removing them from the attributions of the "foreman of the pugmill" to those of the true "foreman," that is to say, of the man who knows something of the philosophical principles of the materials he works with.

It must not, however, be supposed that the Parisian mason is exempt from temptations to use contentious materials, whose rapid setting and early hardness may hide a multitude of sins in the way of bad bonding and bad working of the beds of the stone he employs. In fact, the anhydrous lime, so abundantly found near Paris, yields the coarse plaster universally employed in that part of France for setting the rubble masonry of the side and back walls of the majority of houses faced with monumental ashlar; and this plaster construction requires some peculiar precautions, to which it may be desirable to call your attention, in case any of you should, as I earnestly recommend you to, visit our neighbours. The real plaster of Paris, then, swells with irresistible force during the process of solidification, principally in a lateral direction; and care is, therefore, taken that the party, side, or partition walls, executed in rubble and plaster, should not be immediately connected with the front ashlar walls. I have known some of the latter even thrown down by the expansion of the walls perpendicular to them, and very great injury done to the ceilings by the resistance opposed by the walls to the molecular arrangement of the plaster during its setting. For walling purposes, however, plaster is commonly used in speculative buildings, and the only really useful lesson we can learn from this part of our neighbours' practice is, to provide, as carefully as they do, for the unequal shrinkage or compression of the materials we use. In ordinary London house building we are driven forcibly to employ materials which do not very differently under insistent loads and under the effects of seasoning, and I fear that we do not sufficiently guard against the disagreeable and unpleasant effects thus produced. I would add, before quitting this part of our inquiry, that the result of the French system of not recognising the distinction between masons and plasterers, and of executing all plasterer's work with the rapidly setting plaster of Paris, has been far from favourable to the execution of the internal decorations of their houses. The workmen do not acquire the special skill which usually attends the subdivision of labour; and, from the very nature of the material they work with, they are compelled to hurry through their operations to such an extent, that it is almost impossible to find in ordinary Parisian houses straight vertical mitres, true right angles, or perfectly even surfaces. The innate taste of Frenchmen enables the plasterers of that country to execute strictly ornamental details with more feeling than is usually to be found, alas! amongst our own workmen; but in matters connected with sober steadiness and truth, I certainly claim the precedence for our English plasterers over the French masons employed on interior decorations. As to the Belgian and Dutch plasterers, they seem to occupy a sort of intermediate position between those of England and France, as far as regards the organisation of the trade, and we have little to learn from them, except, perhaps, in the small matter of the provision made in most Belgian houses for the reception of the scaffolding required for the customary cleansing and painting of the stuccoed fronts of the brickwork. This provision might easily and well be adopted here; so I describe it, as consisting simply in leaving square putlog holes through the cornice and attic walls, which holes lead into the roof. Through these putlogs are inserted when the houses are to be painted, projecting beyond the face of the walls, and lashed down to the roof timbers in the interior, whilst the scaffold required for the workmen is suspended from the putlogs in such a manner as to allow the work to be completed without any interference with the street surface. The putlog holes, when not in use, are closed with a species of plug, bearing a patera, or some similar decoration.

I would call the attention of such of you as may be able to avail yourselves of the modern facilities for travelling, to the mode in which the French building trades have availed themselves of the constructive capabilities of hollow bricks. For building smoke or ventilating flues they have long employed terra cotta tubes of various sizes, from 9 inches square to 14 inches by 4 inches, so as to allow of their being lodged in an ordinary partition wall—"en teger ouvrage." Hollow bricks for floors, for partitions, for ceilings, domes, greenhouses, &c., are commonly used, and even a casual inspection of M. Eck's beautiful work "On the Application of Pottery and Iron to Building," must convince any candid inquirer that we are immeasurably behind our neighbours in this respect. Perhaps the increasing demand for fireproof construction may induce our architects and builders to inquire more than they have hitherto done into the capabilities of terra cotta ware; but hitherto our spirit of routine has seriously impeded our adoption of many very evident improvements which might ensue from its use, especially since these mischievously absurd exelute duties upon bricks have been abolished. In the meantime, it seems almost superfluous for me to dwell upon the advantages offered by a material of this nature on the score of its lightness, its resistance to the transmission of heat or of sound, and to the facilities it is able to afford to the establishment of any system of ventilation. The French builders practically avail themselves of these advantages, why should not we do likewise?

Before leaving the special consideration of the mason's art as practised in England and abroad, I would beg to call attention to the attention paid by French builders, architects, and engineers to the use of materials possessing certain definite physical properties in the positions they are the most fitted to occupy. Thus, in damp places, none but the more crystalline and the more non-absorbent stones would be used; in positions exposed to violent dynamical efforts of cross strain or of compression, the most resisting materials only are employed, and we look in vain throughout France for the fashionable absurdity of executing the body of a building with a resisting stone, and of coating the exposed angles with a softer one; as, for instance, when the plain faces of our church walls are executed of Kentish rag, and the quoins are executed in Bath or in Caen stone. It is very much to be regretted, we may here add, that the better class of tertiary limestones raised in the neighbourhood of Paris are not brought into our London market; but perhaps the improvements in the navigation of the Seine, and in the railway transit of the northern part of France, may remove the economical difficulties which have hitherto opposed this branch of trade and excluded us from a source of supply of such unbounded capabilities as the district referred to. Almost every description of stone is to be obtained in fact, near the Seine, or on the margin of the Northern Railway of France, from the *hard lias* and *roches*, to the softer *pierrres franches* and *vergelets*; and their colour is unexceptionable.

As to French carpenters' and joiners' work, the mystery is to explain how their men succeed in doing what they do with the very strange tools they employ. All the hand-saws they used in the days when I resided in France (and I do not think that free trade has yet effected much change in this respect), were simply bow-saws; mallet and chisel were almost unknown to the carpenters, and, instead of them, they used a strange looking tool about 2 ft. 6 in. long, and bearing a chisel, somewhat like our tenon chisel, at one end, and like a ferrom chisel at the other. These chisels are fixed to the bar, which has a handle about the centre, so that by the mere weight and leverage of the tool, it is enabled to work with singular effect, and even to serve, as occasion may require, as a plane, as an adze, or as a chisel of the respective kinds named. It is called a *bisauque*, and I am sorry to add that at times, it becomes a formidable weapon in the hands of the excitable Frenchmen in their drunken rows or in their faction fights. Strange looking as these *bisauques* are, the French workmen manage to execute, at a very cheap rate, the most complicated descriptions of carpentry; and I need only refer to Colonel Emy's or to Colonel Ardant's singularly beautiful and elaborately illustrated works on that subject, to prove that they are, at the least, as competent as we are to carry out any description of wooden framing. Rondelet's roofs, Emy's erect timber roofs, Kraft and Wiebeking's bridges, and the singular wooden bridges erected in Switzerland, indeed, show that the capabilities of the wood at hand were well understood, and successfully applied, by the carpenters of the whole continent, at a time when we were content with applying timber on a very small scale; and I suspect that it is only since the days of Peter Nicholson and of Tredgold that English carpenters have displayed the scientific skill and perfection of mechanical execution which justly entitle them now to the foremost rank in their pursuit.

It seems to me somewhat the peculiar form of instrument used by the French carpenters, and the somewhat illogical manner in which they frame their heading joints of king and queen posts, struts, and rafters, are to be explained by the fact that their practical habits have been formed upon the use of oak timber; whereas the habits of our modern school of carpentry have been formed upon the use of the more easily worked fir. In the more recently constructed French buildings the differences between the practice of the two nations has ceased to be discernible; and, indeed, the higher mathematical training of the better class of French workmen has led them even to improve many of the modes of framing they have learnt from us and from the Americans.*

* Read before the Society of Builders' Foremen and Clerks of Works, Lyon's-Inn Hall, on Wednesday, 12th March, by Mr. GEORGE R. BURNELL, civil engineer and architect.

* To be continued.

HINTS ON DESIGN IN ARCHITECTURE.*

THE excellence of any architectural design is in ratio with the amount of thought and study brought to bear upon it. This may also be said of other studies of a high intellectual order. It behoves us, then, to spare no pains in the production of our designs, so that they may be at once excellent and bear impress of deep and earnest thought. It has often been observed that "first ideas are best." Now, granted that they are, it would not be wise to make such ideas public in all their crudity and incompleteness, as, in all probability, they would not meet with that favour and recognition that they would otherwise have obtained had they been subjected to that scrutiny and afterthought so necessary to stamp them as originating in a lofty and cultivated mind.

How many architectural works do we see around that bear us out in this reflection, the designs of which are in many respects good, and, it may happen, very original, but, either from haste, inattention, or other causes, are not allowed to undergo the refining process by the mind of the architect necessary to rank them as works of the highest order of art. The student, therefore, should not spare any trouble in the preparation of his design, neither should he be satisfied with it until he has thoroughly studied and matured the whole, first collectively, then individually.

To carry out an architectural design successfully and complete in all its parts is no easy matter, but it may be done if the designer is determined, and he cannot make too great a sacrifice towards obtaining that reputation which is open to all, and should be coveted by those that are engaged in the profession. We cannot over-estimate the value of care and attention necessary to be bestowed upon any design that tends to raise it above mediocrity.

Architecture is peculiarly a public property, being brought before the eyes of thousands, and should endeavour in every possible way to add to the beauty of our towns and villages by erecting buildings appropriate to their several uses, and agreeable and harmonious with their surrounding companions.

Seeing the necessity for being careful in the preparation of our designs, I must now say that, in the development of them, the first ideas should not be lost sight of. It is necessary occasionally to make some departure from an original thought. Bear in mind, however, not to deviate too much, for then it may be stripped of all its freshness and originality. To an imaginative mind it is hard to curb the reins of fancy. This, however, must be done.

The façade of a building might be rendered admirable by the slightest alteration in the curvature of a window-head, by making the cornice deeper, or by the omission of certain features; but for the want of proper revision it is rendered objectionable to the eyes of skillful architects, and of dissatisfaction to others who are not competent to explain the cause of their disapproval.

It is convincing, then, that certain principles must be adopted to insure a successful result, and rules and principles, if made use of at all, must be capable of practical application; and I will to-night endeavour to give a few hints on the subject of architectural composition for the guidance of the student members of this Society, hoping they will be received as the result of some experience and great love for this branch of the arts. I do so with great diffidence, feeling that I am but a tyro myself; but if my paper should be the means of creating second thoughts, I shall feel repaid for any trouble I have taken in the preparation of it.

It matters little whether a building is to be designed after the Greek, Roman, Gothic, or Renaissance manner. Whether Venetian or Lombardic, Norman or Elizabethan, we shall, on examination, find ruling principles in all of them; and I am of opinion that the merits or demerits of any particular building rests not so much on the fact of its having been erected in this style, so much admired by one, or that style, deprecated by the other critic, but upon the presence or absence of principles that are indispensable to the perfection of every architectural structure.

Any design will be unsatisfactory and altogether a faulty one, no matter how pure a style you adopt, if you should violate the rules of composition; and a style not to be admired in itself—as the Chinese, for instance—might be turned to profitable account and made capable of many valuable suggestions, if infused with spirit and invention that is wanting in the other.

A great deal of valuable and instructive information has been written on the subject of architectural aesthetics, and Mr. Garbett's book, published by Weale, is one of the best of which you can possess yourself. The subject of design is fully and carefully treated. In it you will find much to instruct, and there is a freshness and force in the treatment of the whole subject that rivets the attention and delight of the reader. I would recommend it to all. I have read it myself several times, and found much benefit arise therefrom. My paper is but a few hints in a practical way, just jotted down for reference. I do not pretend to set before you such a dish as the one I have just alluded to.

Every habitable building requires to be provided with an entrance, windows for the admission of light, and a roof for protection against the inclemencies of the weather; and warmth is also necessary, we must make provision for securing this end by building fire-places, the chimneys of which, if carried above the roof, afford the designer an excellent opportunity of exercising his taste and skill. So far as necessity is concerned, these are all the parts to be attended to in designing dwellings; but if means are not altogether wanting to render the elevation an object of pleasure and satisfaction to the eye, it is to adorn and enrich these features that the genius of the architect must be brought to bear; and the first thing to be considered in obtaining this end is "breadth"—not by lineal measure, but by the just proportions of solid or plain surface with void and shadow. This is, generally speaking, very difficult to be done, as the overcast and gloomy nature of our atmosphere requires the windows to be of considerable dimensions; this disadvantage tending to destroy that breadth or repose so very necessary to a proper architectural effect.

As a rule, then, if your design requires a large amount of window space, more than is proper for the maintenance of this quality, you must leave the walls free from as little decoration as possible, only enriching the windows with small mouldings or a narrow architrave; and the cornice with a small string course and base moulding would be found quite sufficient to satisfy the eye.

It is not good taste to introduce—I may say, squeeze in—a buttress or plaster between windows or other openings closely set, thereby covering the wall space, that would have been much better left perfectly free from any decorative feature. Yet how often do we see this done? The defect I have just alluded to is particularly glaring if the window-heads be straight and are closely set up to the cornice or fascia above, for then the elevation presents altogether a disturbed and uneasy appearance, the solid portions of it, as it were, being in the form of a cross, or chequered, and becomes nothing more than plaster, cornice, and window. It would, indeed, be better to use curved or semicircular headed windows; although they would not admit so large an amount of light, yet they would allow of a small portion of the wall to be seen, as the spandrels above them would be gained by this means, besides making a variety in the lines of the composition.

Coupled windows, if the plan admits of it, enables you somewhat to get over this crux, as you gain additional wall space; and not only that, you then reduce the voids to one-half their former number, as each coupled window becomes as one, thereby simplifying the entire elevation, permitting you to treat them more elaborately with wider architraves than you could otherwise have done had they remained single.

Before I proceed any further, bear in mind that, if the proportions and positions of the general outlines in an architectural composition be not satisfactory and pleasing—if there are any radical errors and want of principle involved in it, then you had better not attempt to decorate or enrich it until you have carefully revised and corrected it, as any amount of subsequent adornment cannot rectify or make up for the want of this quality.

To insure breadth you can, as a rule, make the wall space between the windows equal in width to the windows themselves, but not less. This is, indeed, a good proportion where no buttress or column intervenes; but, on the contrary, if one of these features is introduced, you must increase the space between the window and buttress sufficiently to prevent a shadow from the latter entirely covering the wall space and reaching to the windows.

Having spoken on the importance of preserving "breadth" in your composition, I will now touch upon the several parts of an architectural elevation.

The doorway—no matter whether the building be a church, or exchange, or dwelling—

should be the most conspicuous and prominent feature in the façade, and it should always be designed and treated in a dignified and vigorous manner, as being the principal point of attraction. I am sure you will agree with me when I say there is nothing finer in architecture than the noble portals of some of our cathedrals and those on the continent.

A doorway cannot scarcely be made too large; that this is perfectly understood by the architects of the present time is evidenced by looking at the public and private buildings erected in this rapidly improving town within the last few years—a satisfactory contrast to the miserable and meagre entrances that were perpetrated during the two or three reigns previous to this one.

One important thing in designing a doorway (particularly if it be in the Italian style) is to give it a totally distinct character from the windows. We frequently see the head of a door treated in exactly the same manner and of the same shape as the window openings of the building, thus giving a long and disproportioned appearance, the extra height above the door (sometimes very considerable) being filled in with glass or ironwork. No light over a door should exceed half its width in height, unless it be a narrow one. The jambs should be built of a hard material, so as to resist any injury that they are occasionally (as in public buildings) very much exposed to.

The lower portion should be designed in a plain way, with fewer or no projecting members, or if delicate and enriched ones be adopted, take care they are protected by bold or plain parts.

As cornices do not seem to have been developed in Mediæval architecture, nor to have taken so prominent a position as to form an integral feature as the cornice of the anti-Gothic styles, perhaps, in speaking about this important part of the elevation, I had better take my example from an Italian design.

Give your cornice sufficient projection, but do not, as a rule, let it project more than its depth, unless it be constructed of wood, in which case it may greatly exceed this, particularly if it is supported by boldly designed brackets; in this case, however, it must be treated as a wooden construction, and not to imitate the forms of one only suited for a heavier material, as stone.

As your elevation may, perhaps, depend a great deal upon the cornice for producing shadow, see that you make it do its duty; but, above all, attend to the corona—this member is the principal one, and should be proportioned with great care, as it is the "echo" of the wall below, in the same way (as observed by Mr. Garbett) that the tenia, or astragal, is the echo of the cornice. As an uninterrupted cornice of some length would present a monotonous and tiresome appearance if the lower edge of the shadow cast from it upon the wall underneath was not to be broken by the modillions or blocks, these necessary members must be introduced to produce a satisfactory result; and it scarcely matters how they are shaped where they are always in shadow, provided their faces catch the light, and by this means break the line of shadow below.

Cornices should always be accompanied by friezes, as they tend to grace and dignity; their use seems to be to blend and harmonise the cornice with the wall, and are, in my mind, quite indispensable to a good effect.

If no architrave and few members are introduced below the frieze, it can be made much deeper than if accompanied by those features, and if slightly advanced from the general wall line of the building an improvement will follow.

The cornice, or upper member, in the architecture of the Mediæval period, although very different in its application, seems to possess the same guiding principles as in other styles. As it is, with rare exception, stopped by the buttress rising up at the division of every bay, it is not so requisite to introduce blocks or paterae to take away a monotony, but, at the same time, is much improved by those decorative features, as the shadow cast from them into the hollow at the back produces a fine contrasting line, and enables us to judge of its contour.

The Gothic cornice is frequently designed with a smaller member running below and parallel with it, which is as indispensable as the tenia in the other styles, unless the cornice includes a large cavetto, turning out at the lower edge and producing the echo.

We thus see that whatever style we adopt to decorate our buildings the same principles must be carried out in every case. We must have, in the cornice, the deep contrasting shadow cast upon the wall beneath; we must have the corona, with the cymation above; and, for the perfect satisfaction of the eye, some small projecting member to break the outline of the corona's shadow. The importance, then, of bestowing great care in the proportions of this essential feature of architecture is, I think, felt by all painstaking architects, and a "paper" exclusively devoted to it might be written at some length, and listened to without weariness.

The basement is, perhaps, not thought to require so much attention as the other parts of a building, for we see many erections that are faulty in this part; but if we give a little thought to the subject, we shall see that it is a very important one. Small feet may be considered a beauty by the Chinese, but a meagre, weak-looking basement is in no way to be accounted beautiful.

Now it is almost impossible to give too great importance to this essential feature in architectural design, and therefore study to preserve to it due boldness and freedom of treatment, but taking care to avoid coarseness. Restrictions are imposed by building acts that interfere somewhat with the carrying out of all that could be wished in designing a good basement. In the crowded thoroughfares of our towns it is sometimes almost impossible to give due importance to this feature, but, by ingenuity, a great deal may be effected.

In church architecture (as a considerable space is usually left free around the edifice) you are not so trammelled, and you have scope to produce a prominent basement; but in all cases it is right to design the several parts so that they may not be liable to receive any injury by getting knocked off or disfigured by passers-by.

To judge of the value of the basement, we have only to compare the building of the Oxford University Museum, designed by Messrs. Dean and Woodward, with the Liverpool Collegiate Institution, by Elmes; or the New Palace of Westminster, where the Victoria Tower may be seen one of the noblest designs conceivable—not intruding upon the eye of the spectator, but worthy to bear above its glorious brethren.

I may add that the introduction of window openings is to be avoided, as it materially weakens that stability of effect that true architecture should always possess.

On the subject of shadow, much I feel might be written, as it affords a very large field for thought and study. I am aware that a great deal has been said regarding this subject already, but it seems as if the attention that could be brought to bear upon it were unlimited, and I am, therefore, sorry that want of time will prevent me from doing anything but touch upon this part in the study of architectural composition.

In the first place, to bring good shadows, you must design good members and projections, both in the plan, or general outlines of your building, also in the chief features, and, lastly, the mouldings; and bear in mind, that an over-proportion of shadow will destroy "breadth," as well as create confusion, by a multiplicity of lines and decoration. You must, therefore, spare no pains in drawing out the details of your building, taking care to judge aright the quantity of shadow each projecting member will cast below, and above all, see that the profiles of them are gracefully and chastely drawn. It is a very common error to hurry over this part of the draughtsman's work, the general arrangement and disposition of the plan and the construction taking the most prominent place and attention; and frequently details are drawn out at a few minutes' notice, whilst a workman is waiting, which, when it is reproduced in stone, timber, or whatever the material may be, appears faulty, and a source of great annoyance.

The value of cast shadow (or that which is produced by one object that falls upon another), seems to be much appreciated at the present time, and is often carried to great length, square-faced and sharp angles being very often introduced, and even the ornamental portions are designed to give a crisp effect; but the extreme is to be avoided, as a harsh and unpleasant appearance is produced, robbing the horizontal lines and severe parts of your design of their proper value, yet adding no grace. The production of forms, other than simple geometrical ones, do not give a satisfactory result in flat-faced ornamentation.

As a right idea cannot be always formed of the effect certain portions of architectural detail may produce when executed and placed in position, if they are drawn out in the office, it is much better to do this at the building, as a far more satisfactory idea can then be had; and, if possible, small pieces should be worked, or run in plaster, and fixed at the proper height.

No full-sized detail should be drawn out from the small plans until a drawing to a medium scale be first produced, say 1 inch or 1½ to the foot (the latter is the best, as the

* By Mr. E. H. HEFFER, as mentioned in our last.

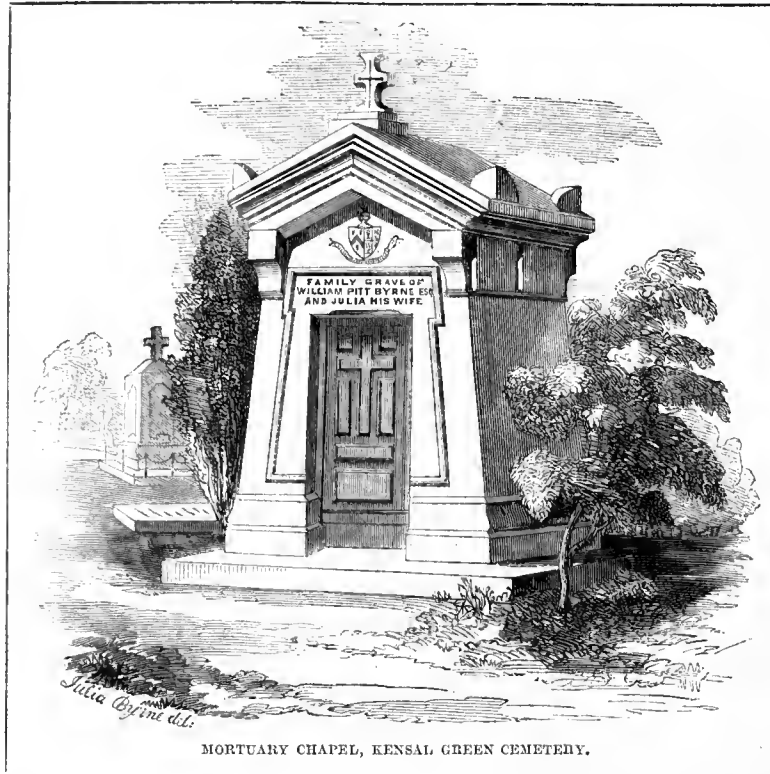
parts are easily measured off with a common rule), as it will generally be found necessary to modify or alter some of the members, for it often happens that the design has a coarser appearance when enlarged; therefore, this gives you the opportunity of refining it, and will ultimately be a saving of time and trouble in the preparation of the full-sized details.

MORTUARY CHAPEL, KENSAL GREEN CEMETERY.

WE give a sketch of the mortuary chapel over the family grave of the late William Pitt Byrne, M.A., and now in course of completion, in Kensal-green Cemetery, by Mr. Carey, of Great Portland-street. It is intended to answer the purpose of securing to the mourner visiting the last resting-place of departed relatives, a welcome privacy. It is built of Portland stone, and the door, as well as a cruciform window at the back, is glazed with ruby glass. Within, is a white marble altar slab, and above, a fine black marble tablet, bearing the epitaph in gold letters.

The late William Pitt Byrne was so intimately and honourably connected with the press that, while passing over his moral worth and the winning attributes of his private character, we are justified in paying a slight tribute to the distinguished abilities and extensive literary and classical attainments which he employed in the public service. His father, sole proprietor and sole manager of the *Morning Post*, having been stabbed one night in the office by a political assassin, Mr. Pitt Byrne, then a Fellow-Commoner at Trinity College, Cambridge, succeeded him in the proprietorship and management of the paper, and not only maintained its political character, but successfully extended its scope. Following the course pursued by his father, he viadicated the cause of independent journalism, and rigidly adhered to his practice of steadfastly refusing all offered testimonials.

Shortly after his marriage Mr. Pitt Byrne retired from his onerous duties, but he did not relinquish his literary pursuits, and continually contributed to the periodicals of the day. Proficient in ancient languages, he was at the time of his premature decease engaged on a work of deep research and universal interest, and proposed publishing a correct and accurate translation, with notes, of all the obscure or unintelligible passages in the Old Testament, especially the Psalms. From the curious errors he had already discovered, it is to be regretted he did not survive to complete the work.



MORTUARY CHAPEL, KENSAL GREEN CEMETERY.

DOORWAY, CHURCH OF SAN PEDRO DE OLITE, SPAIN.

THE church of San Pedro is one of two very remarkable churches in the town of Olite, in the kingdom of Navarre, pleasantly situated on the river Cidacos, once one of the jewels of the Navarrese Crown, but now fallen into neglect and decay, and only half populated.

We illustrate this week the very fine doorway of this church, and part of the façade, the whole of which is grand and massive, as well as elaborately sculptured. The tower rises to a considerable elevation, capped by a gallery with perforated quatrefoils, and from this springs a lofty spire. The proportions of the doorway are very good, and the ornament which decorates the mouldings of the arches and capitals of the columns is remarkable, both for the delicacy and freedom of its execution and variety of design. It was evidently constructed during the eleventh and twelfth centuries. The rose window over the doorway, it will be remarked, does not quite centre with it. The broad band running beneath the window is most elaborately and quaintly carved. The church was built by one Azzezzo Pinel, a notary of Olite, as is set forth in an inscription on the front.

LONDON FIRES.

THOMSON HANKEY, Esq., M.P., has sent a list of queries to the Lord Mayor, with the following note:—

My dear Lord Mayor,—I enclose a list of queries which I should probably put to any witnesses who would kindly attend on our Fire Committee on behalf of the City of London, and should be quite ready to put any others which the witnesses might desire, in order to give us such information as might be in their power as to the existing state of the laws, the efficiency, sufficiency, defect, or otherwise, for the general protection of London against losses by fire.

Our object is not to go into the question—as far, at least, as we can avoid it—as to the origin of fires, but, assuming that fires do occur, to inquire what is the best form of organisation in any large town for the general protection of the inhabitants against such calamities, and by what means the expenses attendant thereon can most equably be defrayed.

Before we go, however, into the question of future organisation, it is necessary to obtain all the facts we can as to existing laws, and as to the existing rights, which have, to a certain extent, supplanted the existing laws. We have evidence laid before us from the Home Office that it is not the intention of the fire insurance companies to keep up the present Fire Brigade. It is for us to take the best evidence we can as to whether London can safely be left without such a fire brigade; if not, whereunder whom it ought to be placed, and by what means the expense should be defrayed.

STATUE OF THE LATE MR. JOSEPH LOCKE, C.E.

A MEETING of gentlemen who had agreed to form a general committee for originating a memorial to the late Mr. Joseph Locke, civil engineer and M.P., was held in the theatre of the Institution of Civil Engineers, on the 12th inst., for the purpose of considering the form of the proposed memorial.

The Chairman, Lord ALFRED PAGET, in introducing the subject, referred to his personal acquaintance with Mr. Locke, his social qualities, the general regret at his loss, and the desire to perpetuate his memory by the erection of a statue to be placed in juxtaposition with those of Stephenson and Brunel, with whom he had been associated in life in the construction of the gigantic railway undertakings of this and other countries, as an incentive to the younger members of a profession to which Great Britain owes so much of her present grandeur and prosperity. Lord Alfred mentioned the communications which had taken place between himself and the Chief Commissioner of Woods and Forests as to the site of the proposed statue, and stated his belief that, notwithstanding the reply, he had little doubt but that if the application was supported by the influential gentlemen present, and assisted by the representatives of the Stephenson and Brunel memorials, it would be successful, and he promised to use every means in his power with this object.

Mr. J. J. HOPE JOHNSTONE, M.P., said that for many years he had the pleasure of the intimate friendship of Mr. Locke, and concluded a most touching address by moving a resolution in favour of the erection of a public statue to his memory. The resolution was seconded shortly by Mr. HAWKSHAW, and carried unanimously.

Mr. MOFFATT, M.P., alluded to Mr. Locke's remarkable zeal, talent, and energy, and the great engineering works in which he had been engaged, and moved that subscription lists be opened (limited to ten guineas) for the purpose of providing the necessary funds. This resolution was seconded by Mr. COBURN, M.P., and carried unanimously.

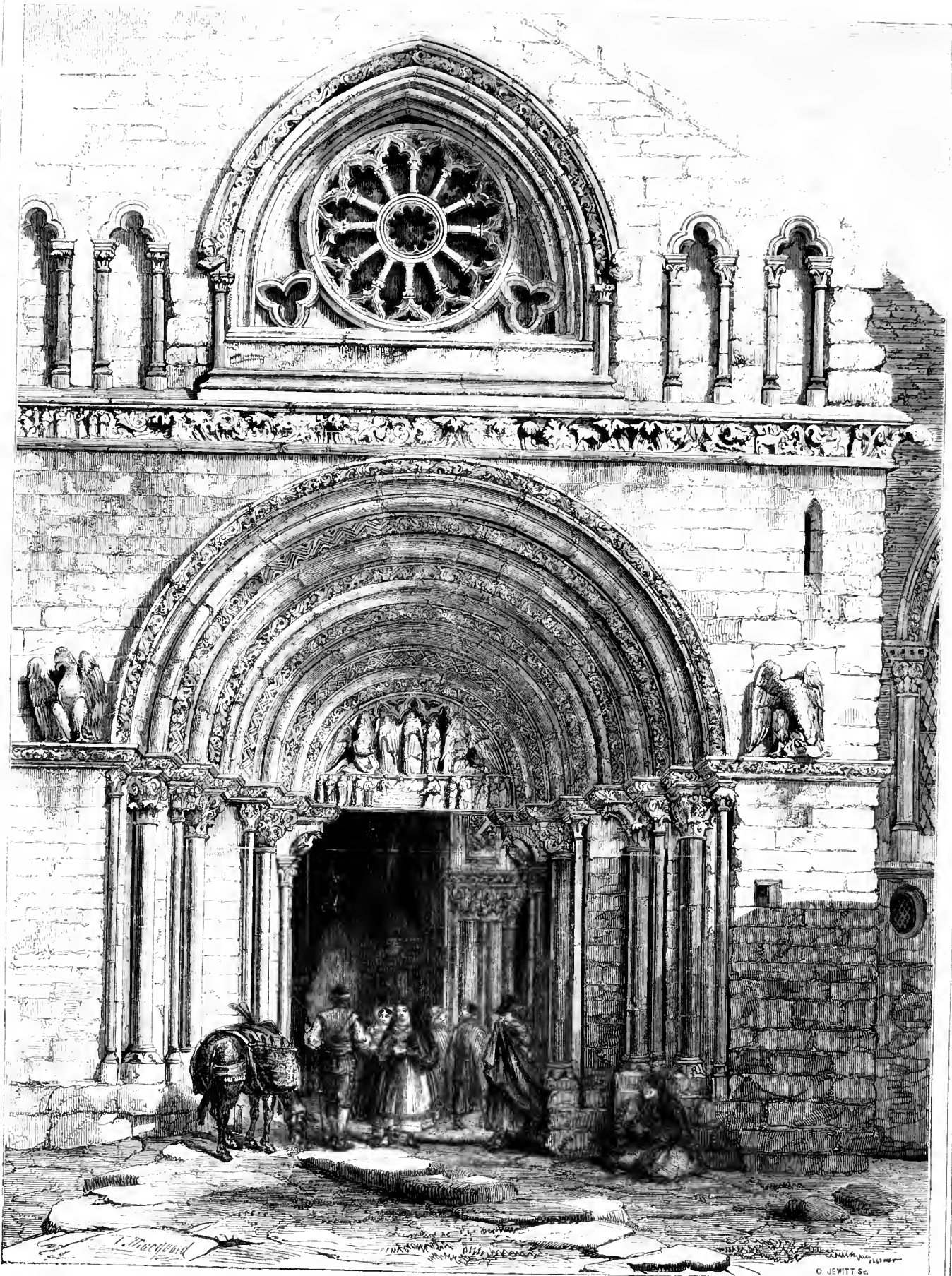
Mr. G. P. BIDDER referred to Mr. Locke as associated with Stephenson and Brunel in the early history of railways, and the natural desire, therefore, that a statue to his memory should be placed in juxtaposition to theirs. After alluding to his personal and cordial friendship with Mr. Locke, he moved the appointment of a committee for giving effect to the foregoing resolutions, and that Charles Manby, Esq., be requested to act as honorary secretary. The resolution was carried.

LINCOLN DIOCESAN ARCHITECTURAL SOCIETY.

AT the last committee meeting held at Lincoln, it was determined that the annual public meeting for the present year should be held at Market Rasen, on Thursday and Friday, the 5th and 6th days of June. The subject of the Cathedral pulpit was next discussed with some anxiety, as the cost considerably exceeds the sum that has as yet been subscribed for its execution. We have already described Mr. George Gilbert Scott's design. It consists of the pulpit and a canopy above it, interspersed with statuettes of prophets, &c., in carved oak, the cost of which last alone would, it is said, be £140. The treasurer, it was stated, had received a sufficient amount of subscriptions to enable the Committee to order the pulpit proper, but as the Chapter has expressed a very strong desire to possess the pulpit in its entirety, the Committee is anxious to fulfil that wish, and determined to send out circulars to the members and friends of the society in the hope that the requisite sum will be shortly raised. The whole cost of the pulpit will, we understand, be £450.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post*. Gold watches, 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enable persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

J. W. BENSON, 33 & 34, Ludgate-hill, 46 & 47, Cornhill, London, E.C. Established 1749.



DOORWAY OF THE CHURCH OF SAN PEDRO DE OLITE, SPAIN.

THE LOCH KEN VIADUCT, PORTPATRICK RAILWAY.*

THIS viaduct was situated on a curve of half a mile radius, and carried a single line of railway over the loch at an oblique angle, so that the width of the waterway was increased from 265 feet to 360 feet, the depth of the water at the point of crossing being 29 feet in summer. It consisted of seven openings, three of 130 feet each in the centre, spanned by wrought-iron girders of the bow and string form; two semicircular arches of masonry, of 20 feet span, in the abutments; and two openings of 20 feet each at the ends, provided with flat east-iron girders. Owing to there being scarcely any current, it was not deemed necessary to set the piers in the line of the loch, but they were placed at right angles to the viaduct, and each pair of girders was at a slight angle to the adjacent ones.

The foundations consisted of strong gravel, except in the case of the east abutment of the main openings, where a running sand was met with, and in this instance the lower courses of the masonry were laid on a bed of hydraulic lime concrete 2 feet in thickness. The two deep-water piers were each formed of two towers, 8 feet in diameter, placed 8 feet apart, and connected above the water level by semicircular arches of masonry. For each tower of the piers a east-iron tube 8 feet in diameter, in six pieces, was sunk, the tubes being 36 feet and 42 feet in length for the east and west piers respectively. When the masonry was brought up to this surface, the upper castings of the tubes were removed. Around the piers 4,000 cubic yards of loose rubble stones were deposited, so as to produce an artificially deeper foundation. The tubes, when placed in position, sank from 1 foot to 2 feet, by their own weight, until they reached the gravel and sand, where they remained quite firm. This formed a good test of the sufficiency of the foundation, as the weight of the tubes on their narrow edges was equal to from 8 to 9½ tons per square foot, while the total weight on the foundations of the finished structure, including the moving load, was only about 6½ tons per square foot.

The method adopted in sinking the tubes was that of ordinary well sinking. Two plate-iron screw pans, of an inverted cone shape, were employed; one 2 feet in diameter at the top and 1 foot deep, and the other, which was only used for the harder portions of the excavations, 1 foot in diameter at the top and 1 foot deep. There were openings in the sides, covered with leather flaps, to prevent the material from escaping when the pans were filled. Three arms of round iron projected through the sides of the pans, and being connected to a long rod with a cross handle at the upper end, the screw pans were worked by four men, and when full were raised by tackle. The larger pan raised about 1 cubic foot of material each time, and the smaller one about one-fourth of that quantity. By these means the tubes were sunk in some instances as much as 18 inches in one day, the minimum being 2 inches per day in the case of the north tube of the west pier, where large boulder stones were encountered, rendering necessary the use of a screw pick. When the tubes had been lowered the desired depth, concrete was deposited within them, varying from 12 feet to 18 feet in depth in each tube. On this concrete ashlar masonry was laid, the cordon course being of granite, in large blocks, for receiving the ends of the girders, which rested on wrought-iron plates, laid on thick sheets of vulcanised India rubber, to lessen the effect of vibration.

The bow-and-string girders were each 136 feet 8 inches in length, and were segmental in form, the rise being 17 feet 6 inches, so that the segment was almost identical with a catenary curve, or the true curve of equal pressure. The sections of the upper and the under booms were identical. They consisted of a main plate, 24 inches broad and ¾ of an inch thick, and of two channel irons, each 8 inches by 4 inches in section and ½ an inch thick, placed at a distance of 8 inches apart, between and to which the struts and ties, of the same section of channel iron, were riveted. The transverse girders for carrying the roadway were 6 inches in depth at the ends, where they rested on the channel irons of the under booms, and 15 inches deep in the centre. The middle web of these girders was ¼ of an inch in thickness, and there were angle irons, 3 inches by 3 inches by ½ an inch in section, at the top and the bottom of the web on each side. Every alternate girder projected 2 feet, from which T iron struts were carried up to the crossings of the diagonal bracing. The weight of the girders and roadway between the points of support was 88 tons, and of the ballast (2 inches in depth) 14 tons, making a total dead load of 102 tons; and taking the rolling load at one ton per lineal foot, the total load on one span would be 232 tons. The area of the upper boom was 33 inches, and of the under boom, exclusive of rivets, 27.4 inches. The distance between the centres of gravity of the upper and the under booms was 17.04 inches. The tensile strain on the under boom amounted to 4.04 tons per inch, and the compressive strain on the upper boom to 3.35 tons per inch. When the whole of the load was upon the girders, there was no compressive strain on any of the diagonals, but there were tensile strains varying from 3.4 tons to 7.5 tons, or equal respectively to 9 cwt. and 1 ton per square inch of section.

The Author considered that the bow-and-string girder possessed advantages over the Warren or other lattice girders, with parallel top and bottom members; as in the latter class it was not possible to make the top and bottom members theoretically correct, without great labour and waste of material, and as, owing to the great variation in the strains on the diagonals, it was necessary that they should be of varying dimensions, involving in some cases even different sections of iron.

The girders were built in position on staging, and the greatest amount of deflection of any one girder from its own weight was ⅜ of an inch. Subsequently, when a locomotive-engine, weighing 34 tons, was placed in the centre of each span, and afterwards was run over, first at ten miles an hour, and then at twenty-five miles an hour, the deflection amounted to from ⅜ to ¾ of an inch in each girder, there being no perceptible difference in either case. Finally, when four engines were coupled together, so as to give a load equal to 1 ton per lineal foot, the deflection only amounted to from ⅜ to ¾ths of an inch.

The total cost of the viaduct amounted to about £13,000.

Mr. Tite has explained that the motto placed on the pedestal of the centre figure in the pediment of the Exchange was not suggested by the late Prince Albert, as generally supposed, but by Dean Milman; but Prince Albert suggested that this awkward surface, which puzzled the sculptor and architect, might be very appropriately filled with a motto.

* Read before the Institution of Civil Engineers, on the 4th instant, by Mr. E. L. J. BLYTH, M. Inst. C.E.

ARCHITECTURAL ASSOCIATION.

An ordinary general meeting of this body was held at the rooms, Conduit-street, Regent-street, on Friday; A. W. BLOMFIELD, Esq., M.A., President, in the chair.

Mr. J. C. ADAMS, Hon. Sec., read the minutes of proceedings of the last meeting, which were approved and confirmed.

Nomination.—The following gentleman was nominated for membership:—Mr. Francis Sills (proposed by Mr. Taylor; seconded by Mr. Waller.)

The Modelling Class.—Mr. BLASHILL drew attention to the importance of members of the Association joining the modelling class, attendance upon which he himself and many other members had found to be of great advantage. A little practice of working in the round was very beneficial, and gave gentlemen the capacity of drawing with much more facility and effect. He understood there was a chance of their getting some casts from the Architectural Museum if the numbers attending the modelling class was increased, and he hoped that such would be the case.

The CHAIRMAN agreed with Mr. Blashill. For the last two or three weeks unavoidable causes had kept him away from the modelling class, but he intended in future to attend regularly. Having had casts offered to them, and the whole subject having occupied the attention of the senior members of the profession, he thought they ought to have a good modelling class, and hoped to see an improvement in it before long.

Mr. R. O. HARRIS thought there was one thing that influenced the modelling class very much, and that was the time of meeting (six o'clock), which, on the class of design evenings, rendered the sitting very long. Six o'clock was a very inconvenient hour for many gentlemen to come to the class, and probably was the cause of the number attending the class not being greater; and he thought it would be desirable to make arrangements for meeting on two evenings of the week instead of Fridays only.

The CHAIRMAN.—There might be some difficulty in arranging that with Mr. Ross (teacher of the modelling class).

Mr. BLASHILL.—At present we have the rooms only for one night in the week.

The CHAIRMAN.—Certainly, to have two nights a week would be a better arrangement.

Mr. HARRIS thought it would be impossible to have a full modelling class on the class of design evenings or the ordinary general meeting evenings.

Mr. BLASHILL.—At present the class of design night was a long night.

The CHAIRMAN remarked that they had better consult with Mr. Ross on the subject, which they could not discuss at that time.

The subject then dropped.

Joinery.—Mr. J. A. BUNKER then delivered some observations on the subject of joinery, his remarks being illustrated by models of doors, floors, sashes, casements, skirtings, &c. Mr. Bunker said a good authority had defined joinery to be that part of the science of architecture which consisted in framing or joining together wood for the external and internal finishings of houses, such as the linings of walls and rough timbers, the putting together of doors, windows, stairs, and the like. It required, therefore, more accurate and nicer workmanship than carpentry, being of a decorative nature and near the eye. It was not his intention to describe all the materials in general use in joinery, nor the tools employed, but he would hand round the room a number of models which he had brought with him. He then showed a piece of white deal; they knew it was white deal by the knots, but the grain of it was very much like yellow deal; and also a piece of yellow deal, the chief difference being the dark-coloured knots; but the knots were now very often coloured, so that they were hardly able to tell the difference between white and yellow. He next showed specimens of pitch pine, which had a very large amount of turpentine; teak, which was pretty in colour and grain, and was also very heavy; and a piece of wainscot. Those were some of the materials, but there were many others used by the joiners. As for the tools, they ought to look round a joiner's bench and ask the joiner what the various tools found there were used for. Perhaps the simplest work a joiner had to do was to prepare floor boards. The best kind of floor was that which showed no nail holes. He then proceeded to describe the several descriptions of floors and skirtings. He reminded his audience that in making drawings for joiners' work they should ever remember that wood would shrink. Having had the floors laid and the skirting fixed, they should then think of doors. In order to that the foreman of the joiners got his rod and set out a section, longitudinal and transverse, of the doors the joiner had to frame. The rod was sent to the chalk-line foreman, whose duty it was to cut everything for doors with the least amount of waste. The lecturer then exhibited a model of a four-panel square door, and described the mode of making it with much minuteness, including planing, taking out of winding, thicknessing, mortising, tenoning, ploughing, gluing up, cleaning off, &c. He next proceeded to explain the mode of fixing and hanging doors, referring to various kinds of doors, both ancient and modern. He next spoke of sashes, which were various in their description, and generally got their name from the section of the bar. The simplest kind of sash was one fixed into the linings, which might be double or single, as might be wished. Mr. Bunker next proceeded to explain the mode of hanging sashes, the operation of the pulleys, and the preparation of sash linings. He then described the construction of stairs, plain and secret dovetailing, door frames, and other matters connected with the subject of his lecture, and resumed his seat amidst applause.

The CHAIRMAN said he was sure they were all very much indebted to Mr. Bunker for his remarks, and he hoped they would draw forth some discussion. He certainly thought it was too often the case to describe things in specifications they did not understand, and it would be much better very often if they put more into their drawings and less into their specifications. There was a great deal of conventionalism in modern joiners' work, and by putting more in their drawings they should be able to hit upon new forms of joinery which would be of advantage.

Mr. THOMAS M. RICKMAN thought they must all join with Mr. Paraire in thanking Mr. Bunker for his lecture, and for bringing before them specimens which were of much more importance than any quantity of reading or drawing. He proceeded to say that the question of veneer stood much in the same way as the question of gilding. The value of a log of mahogany fit for being cut up into veneers had reached £1,000 and more. Mr. Bunker had not alluded to the great use of machinery at the present day in working the elaborate portions of

joinery, nor to various methods of flooring in use, such as laying two thicknesses of floors, laying felt on floors, and so on. The lecturer spoke earnest of floors with dowels, but he (Mr. Rickman) thought such floors had objections, though dowelling had this great advantage, that it prevented winding of the boards, and the great difficulty of treating oak, especially English oak, was that it did wind most dreadfully. As to the matter of showing the end of the grain, according to the Gothic principle the beauty of a wood consisted in showing the end of the grain; but at the same time the Classic principle was that there was a greater beauty in the side way of the grain than in the end way. The two arguments did not meet, he apprehended, in any way, and they must, therefore, take their stand either on one or the other. Of course they might follow Mr. Bunker in the various matters he had brought before them, staircases especially, and other portions of joinery. He should like the lecturer to explain to them the formation of a circular well-hole at an outer cut string. A great deal of the most interesting part of a staircase was hidden by the plaster behind, as the lecturer had remarked; and it was desirable the construction should be visible. In some Gothic works he had seen the whole construction of the staircase was seen very well indeed. It would be very useful for all those who wrote specifications to write what was proper, a word which they were in the habit of meeting in price-books. He should like to know what was the meaning of the word *proper* in reference to specifications. It would be of great advantage to them that they should understand the meaning of and be able to use freely all the technical terms which Mr. Bunker had elucidated, and to know how many they should use in describing a thing, and to keep up the same pitch in describing their specifications. He thought an architect in describing his work ought to take one pitch in his specification, and to make it intelligible for the class of contractors he expected to work under him.

Mr. C. H. F. LEWIS said there was one objection to showing the side of the grain, and that was the durability of the wood, especially for outside work.

In reply to a Member,

The CHAIRMAN said the only apparent aim of modern joiners' work was as far as possible to conceal the construction, as in secret dovetailing.

Mr. JOHN BROWN, architect, Norwich, explained, by means of models, his patent cloth padded strips for window sashes, French and other casements, doors, show cases, &c., to exclude draughts, dust, wet, and other annoyances arising from the imperfect fitting of the above. The patent had been successfully applied in a great many cases.

A vote of thanks having been passed to Mr. BUNKER, on the motion of Mr. NEW, the meeting broke up.

BITUMINISED PIPES.

A BRADFORD subscriber asks for information—first, as to whether the patent bituminised pipes are a durable and strong pipe; second, as to whether it is possible to make a perfect plumber's join where the main and service pipes joins; third, whether the water running through is likely to taste of the bitumen.

INJURIOUS ACTION OF LEAD PIPES ON WATER.—The Sub-Committee appointed by the Manchester and Salford Sanitary Association to investigate the action of the water supplied by the Manchester Corporation upon lead, have made their report upon this subject, and the Association, in issuing it, especially urge upon all persons using water which passes through lead pipes the importance of attending to the closing advice of the report—never to use water for dietary purposes which has remained even for a few hours in the pipes. The Committee state that they are greatly indebted to Dr. Grace-Calvert for the valuable assistance rendered by him in carrying out the experiments at the laboratory of the Royal Institution. New ordinary lead piping, through which the water would pass rapidly without becoming deteriorated, was found to impregnate it with from .02 to .04 grain per gallon after being allowed to stand in it a single night; similar results being obtained from daily experiments extending over a month. When the water was allowed to stand in the pipes for twenty-four hours it became impregnated with from .05 to .25 grain per gallon. The experiments were made upon four varieties of lead piping—extra-tinned, ordinary, best or virgin, and common. The water from the virgin was found to be more impure than that from either the extra-tinned or the common pipe, the ordinary lead containing far less impurity than either upon the first experiment, whilst the second experiment gave a different order of results—the water in the extra-tinned piping the purest, that in the virgin next, then the ordinary, and lastly the common. From the experiments which have been carried on during a period of two years, in which more than 300 samples of water have been tested, it has been concluded that the Manchester water does act on lead pipes to a very serious extent; that that action continues for a much longer period than is generally supposed; that when the water remains stagnant in the pipes it not only becomes highly charged with the dangerous poison, but a coating is formed on the inner surface of the pipes, which coating is subsequently detached by the water passing through, and which it impregnates with lead; that even after pipes have been used a considerable period, the quantity of lead contained in the water which has remained twenty-four hours in the pipe is quite as great as in cases where serious effects have been known to ensue to parties using the water; and that the practice of lining lead pipes with tin affords little, and only temporary, protection, and is of no practical value. Bearing in mind that lead is a cumulative poison, and that water containing it may be used for a considerable time, and the foundation be laid for great suffering and physical injury before the symptoms became so marked as to justify a medical man in pronouncing the case to be one of lead poisoning, the discovery and adoption of pipes for domestic supply which could not be productive of this evil is of the greatest moment, especially to our densely populated labour districts. The first step towards remedying the evil is a thorough conviction of its existence, and of the serious results which may follow from disregarding its importance. Let the community at large be convinced on these points, and it is more than probable an efficient remedy would be discovered, more especially if the Corporation would offer to parties engaged in the necessary pursuits some inducement to produce a pipe economical in cost, easy of application, and on which the water would not act prejudicially.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting of this body was held at the rooms, 9, Conduit-street, Regent-street, on Monday evening; the President, WILLIAM TITE, Esq., M.P., F.R.S., in the chair.

Mr. T. HAYTER LEWIS, hon. sec., read the minutes of proceedings at the last meeting, which were approved of and confirmed.

Death.—Mr. JAMES BELL, hon. sec., announced the death of Mr. W. C. Lochner, fellow. If any member would communicate some account of his career to the honorary secretaries the council would be obliged.

Letter from the Queen.—Mr. T. HAYTER LEWIS stated that the President had received a letter of which the following is a copy:—

Lieutenant-General Grey presents his compliments to Mr. Tite. He has had the honour to lay Mr. Tite's letter of the 27th ult., with its enclosure, before her Majesty the Queen, and he is commanded to express her Majesty's approval of the resolution of the Institute of British Architects, granting the royal gold medal to the Rev. R. Willis.

The reading of the letter was received with cries of "Hear, hear." Mr. Lewis further announced that Professor Donaldson had received a letter from Professor Willis, expressive of his high appreciation of the honour conferred upon him by the royal gold medal having been awarded to him by the Council.

The New Laws of the Royal Academy.—Mr. HAYTER LEWIS stated that he had received a letter from Mr. Sydney Smirke relating to some changes made in the rules of the Royal Academy, accompanied with a copy of the new regulations passed by the Royal Academy, relating to the admission of students in architecture, which came into operation at the commencement of the present year, and which gave greater encouragement than hitherto to architectural students. Professor Smirke, in his letter, said,—

I think it is right that the attention of the Council of the Institute should be called to the fact that some important changes have taken place in the laws of the Royal Academy relating to the admission of students in architecture, which changes came into operation at the commencement of the present year. I send herewith a copy of the laws as they have been amended. The Council will perceive, with satisfaction I am sure, that greatly increased encouragement is held out to architectural students by the institution of biennial scholarships, and of an annual travelling studentship, besides the gold medal travelling studentship, as heretofore.

But the chief object of my present communication is to suggest that the Council of the Institute should consider and determine the nature of the certificate, which, as you will perceive, is now substituted for the preliminary probationary drawings which have hitherto been required to be expressly made by all who desired to be admitted as students in the Royal Academy. Any drawing the applicant may have by him adequately showing his proficiency will now suffice. The Council should, I submit, decide at once on the form of their certificate, and on the nature of the ordeal to which the Council may deem it expedient to subject those who may desire to be certified by the Institute as fit persons to become students in the Royal Academy. Any regulations in this respect that the Institute may think proper to lay down, I shall feel much gratified in communicating to the Council of the Academy.

The reading of the letter was received with applause.

The CHAIRMAN said it must be very gratifying to them all to find what was the encouragement held out to architectural students now, which was not the case when he and other gentlemen present were students at the Royal Academy. He was very glad to find that greater attention was being paid to architecture by the Royal Academy, and they must take it as evidence of the desire of the Royal Academy to promote architecture by all the means in their power.

Professor DONALDSON showed from the new rules of the Royal Academy that architectural travelling students would derive great advantages under their operation.

Mr. G. GILBERT SCOTT remarked that there were also some facilities for students in architecture becoming also students in figure drawing; they had not to go through the same ordeal as other applicants for admission to such a class, rather less requirements being now made for an architectural student.

After a few remarks by Mr. C. H. SMITH the subject dropped.

The Art-Copyright Bill.—Mr. G. GONWIN inquired whether the attention of the Council had been directed to the Art-Copyright Bill now before Parliament. In the present Bill architecture was altogether left out, and the general opinion that prevailed in respect of it was shown very forcibly a short time ago, when the Lord Chief Baron, in summing up a case (in which an action had been brought by a photographer to protect certain photographs, and which he succeeded in maintaining), pointed out what could be protected and what not. For instance, if a person paid an architect a hundred guineas for a design, any one, when it was executed, could produce it; but the Lord Chief Baron showed that if any one got a negative from a photographer, and thereby produced positives of architects' buildings, he was liable to an action. A greater proof could not be given to show the necessity of protecting the architects.

The CHAIRMAN said the matter had already been noticed by the Council, and would not be neglected by them.

New Members.—The following gentlemen were duly elected, after having been balloted for:—Mr. Thomas Chatfield Clarke, Associate, of 137, Leadenhall-street; Mr. Charles Fowler, Jun., Associate, of 12, Furnival's-inn, as Fellows.

Pictorial Mosaic as an Architectural Embellishment.—Mr. M. DIGBY WYATT, V.P., then read a paper entitled "On Pictorial Mosaic as an Architectural Embellishment," which will be found in another portion of this issue. The paper was illustrated by a great number of drawings, rubbings, mosaic-work, engravings, prints, designs for mosaics, materials for the formation of mosaics, &c., &c.

The CHAIRMAN said he was quite sure they all felt great obligations to Mr. Wyatt for his paper—that was a common form of expression, but he used it with the greatest sincerity, because it was a subject which Mr. Wyatt thoroughly understood, and that evening he had developed it with much ability. The subject of the lecture was one of great importance at the present time, when efforts were being made in the way of causing our cathedrals to grow up with new beauty. The difficulties in this country attending the execution of the extraordinary work of mosaics appeared to have been overcome, for a specimen before them showed that English workmen could produce work equal to the very best work of ancient times. He then invited Mr. Penrose to give some information as to the probability of introducing mosaics into the great metropolitan cathedral of St. Paul's, and the probable expenditure of doing so.

Mr. PENROSE.—Mr. Wyatt in his paper that evening had referred to certain information which he (Mr. Penrose) obtained in Italy respecting the cost of mosaics. With respect to the estimate of an extraordinarily high figure from Rome, he had no doubt it was a veritable estimate, given in figures which he could not mistake, and he had no doubt that if they went so far those who made the estimate would be very glad to execute the work for the money named in

the estimate. But as he knew the style of work at Rome was of a more expensive character than was wanted here, he did not think it right to prosecute the matter further, or to attempt to cheapen the work. From inquiries as to prices made at Murano and other places in Italy, he believed that work at a distance might be done in mosaics for 25s. a foot—that was including all work. On the principle of the prices in Italy he had imagined—and he believed the fact of imagining it brought one nearer to the execution than if one did not believe in it and hope for it—he imagined that they might cover the whole dome of St. Paul's, as Sir Christopher Wren intended it should be, with mosaics—and the dome comprised about 15,000 feet—for or under £20,000; and cover the spandrels of the dome, each about 270 feet, at rather a large figure per foot, but still at an expense of about £500 each, and so on with other portions of the cathedral. He supposed that if they had the means of raising £50,000 for mosaics, Sir Christopher Wren's idea of carrying colour through the whole of his great building could be carried out. He must own he felt a great bias in favour of vitreous material rather than another, because he thought there was a greater depth of colour obtainable by that means—(Hear, hear). He never thought otherwise than of employing English workmen, because he thought the employer and the employed would understand each other better, and that, by the workmen's skill, better work would be obtained than by the employment of Italians. But, in the first instance, he thought of obtaining the material from places where it was best made, and then of encouraging our own manufacturers to equal or surpass it. About three years ago the committee of St. Paul's had £5,000 or £6,000 in hand, and he thought that with that sum they might do a small specimen of mosaic work, but they found more important matters to spend their money upon, and since that time he had not had any immediate hope of their executing any mosaics, but he did not resign his expectation and hope to have on a future occasion the pleasure and privilege of explaining to the Institute what had been done at St. Paul's in this respect instead of speaking of what it was hoped would be done—(Applause).

The CHAIRMAN invited Mr. Fergusson to make some observations on East Indian mosaics.

Mr. FERGUSSON said there really was very little or nothing known about East Indian mosaics. It was quite certain there was no Italian drawing in design amongst them; they were purely local. Some of the patterns cut in stone, inlaid in jaspers, agates, and bloodstones, were extremely beautiful and greatly elaborate. The effect was as highly pleasing as that of any ornament he knew of. If the Italians did suggest this mode of decoration to the Indians, the latter carried them out in their own way, and improved upon them. But there was extremely little known respecting them, or who did the work. In answer to a suggestion thrown out by Mr. Penrose, Mr. Fergusson referred to the mosaics found in the basilicas and round churches of Salonica. The round churches there were covered with mosaics of about the third or beginning of the fourth century, extremely beautiful, and still perfect, while others were more modern, being, perhaps, of the twelfth century. They were a most interesting series of mosaics.

Professor DONALDSON moved a vote of thanks to their friend Mr. Digby Wyatt; he was sure the attention of all had been riveted by the very able, amusing, and instructive lecture which he had given them that evening. His lecture was of the greatest value to every one present, and he had hardly left any observations to be made by those who followed him. There were, however, a few suggestions which he should like to throw out. He was inclined to think that the subject of tesserae mounted higher than Mr. Wyatt admitted; he thought the art mounted to a very high origin indeed, and the traditions handed down to us seemed to show that. The mosaics of ancient times pervaded every structure, monumental edifices, and every building adapted for any use at all. In Cairo you could not go into any church that had not its mosaic pavement throughout, and even in the commonest buildings the visitors found the most beautiful geometric pavements of all colours, and having in them very valuable stones. And at Venice the floors were a copy of the very same style of art pursued in mosaics by the ancients. Mr. Wyatt had alluded to the mosaics in the church of Novara, and he (Professor Donaldson) was some few years ago much struck with the pavement there; the mosaics were extremely interesting, and any of their friends who travelled in the north of Italy he should advise to visit Novara, and study the mosaics there, for they were very curious. With respect to the Cirencester pavements, they were very fine and resembled the Greek. In the tesserae there was great variety of delicate tones, which had very great effect. There was a polish, vigour, and intensity about the mosaics which drawings of them did not represent. Then, beautiful mosaics had been brought from Carthage, and were in the lower room of the British Museum. Many of them were very fine compositions, while others were coarse. Mr. Wyatt seemed to think that the art of Rome sprung up full-grown, but he did not think any art could do that, it must grow for years. No doubt the Roman artists had the benefit of Greece, but they must have studied for years in the carrying out and perfecting of their own style. He thought the art of Rome must have gone through many years, perhaps centuries, before it attained that perfection in which it was found. The Persians of the present day exhibited a taste for mosaics. With respect to the Indian mosaics they had always appeared to him to be very much of the Italian sentiment, and some of them reminded him of the Florentine mosaics, having about them a great deal of the same character. But, perhaps, the Indian mosaics were better executed than those sent from Florence. There seemed, however, an identity between the productions of the one country and those of the other. There was a great deal of European influence upon some of the Indian mosaics. The learned Professor then referred to the beautiful mosaics at Lyons, which were the very highest specimens of art. They were in design and execution inferior to none that had been exhibited at Rome. He hoped the Trustees of the British Museum would not leave the mosaics in their possession in the cellars of the institution, but bring them up, so that they might be better inspected.

Mr. G. GODWIN referred to the point of durability. At Cirencester and other places the pavements were in a wonderful state of preservation, and when they recalled the condition of some of the pavements which had been laid only four or five years, and were worn away already, one saw that they should apply themselves to the question of durability. He pointed to the very elaborate pavement in front of the altar at the church of Wilton, a portion of which was very much worn and the colour very much decayed. Instead of giving up wholly vitrified pavements they ought to consider well before they did so. He seconded the vote of thanks to Mr. Wyatt, who had thrown himself wholly into this subject and exhausted it.

The CHAIRMAN said there was one caution which his own experience would teach him with regard to tesseraed pavements. He intended introducing a pavement of that kind into the Royal Exchange, had it designed by an eminent artist, and carried out by Mr. Singer. But the Portland cement in which the tesserae were set decomposed, and it became as soft as if they had been set in putty. The result was it had to be taken up, and the whole of the pavement was abandoned. The setting of pavements that were to be walked upon was of the greatest possible importance, and it was a matter that required a great deal of caution. Regarding that point they had some experiments to make and greater experience to gain.

The vote of thanks to Mr. Wyatt was carried by acclamation.

Mr. WYATT, in acknowledging the compliment, remarked that as to ancient mosaics found in this country, they were found of the most mixed materials.

Professor DONALDSON said there was a curious mosaic behind the high altar at Westminster Abbey; he did not know whether their friend Mr. Scott had made any particular observations respecting it.

Mr. G. G. SCOTT thought if Mr. Donaldson examined it he would find it was made of marble.

Professor DONALDSON.—No; he had examined it.

Mr. HAYTER LEWIS.—When at Venice a short time back he saw them repairing a beautiful mosaic, and the old gold was found to be of the richest character.

Mr. WYATT.—The old gold was entirely different from the gold used at the present day, and that led to a difference in the effect.

Mr. FERRY said Mr. Wyatt made no reference to external mosaics, of which there was a fine specimen in the Cathedral at Prague. All the mosaics of which Mr. Wyatt had spoken were under cover, under shelter. But it was proposed to have mosaic wall pictures on the outside of the permanent picture galleries for the International Exhibition, in Cromwell-road, South Kensington.

Mr. WYATT avoided referring to external mosaics, the object of the paper being to bring before the meeting mosaics suitable to this country. He thought it was almost impossible to make external mosaics without the joints being somewhat open, thus the moisture got in, and frost followed, which, of course, injured the mosaics.

The meeting then broke up.

ARCHÆOLOGICAL INSTITUTE.

A MEETING of the members of the Archæological Institute was held on the 7th inst., O. MORGAN, Esq., M.P., V.P., in the chair.

The first paper read was by Dr. MACGOWAN, illustrative of a rubbing from a remarkable incised slab, of an inscription of very remote antiquity, now preserved in China.

Mr. SHURLOCK read an account of excavations carried on recently by him on the site of the great Abbey of Chertsey, and of the discoveries he had made, enabling him to trace out the entire ground-plan of the conventual church and other subsidiary buildings.

A series of drawings, by Mr. ANOELL, were exhibited, representing a great variety of pavement tiles with designs from romances, the signs of the zodiac, and others simply geometrical. Many of the original tiles were also exhibited, as well as some portions of gilded and painted mouldings, models of several stone coffins, and other objects of interest brought to light in the course of the excavations. Mr. Angell, the proprietor of the site of the Abbey, expressed his readiness to oblige any member of the Institute who might desire to examine these very interesting remains.

Dr. WILKINS described the discovery of Roman remains recently, near Newport, during the operations of some railway works. A large number of cinerary urns were found, indicating probably the site of an extensive cemetery. They were of the usual brown ware. Quantities of oyster shells were also turned up, and fragments of Samian ware and other objects, signs of an extensive occupation by the Romans.

Mr. ARTHUR TROLLOPE communicated an account of a singular shaft lately found in the garden of a house in Lincoln.

Mr. S. P. FREEMAN exhibited three gold medallions, lately obtained from Athens. The subjects represented are Bacchanalian, and of Greek workmanship, in *basso relievo*, highly finished.

Professor DONALDSON exhibited two funeral urns, lately found in catacombs near Alexandria, and also two drawings of the chambers, &c., which had been forwarded to him by Mr. H. J. Rouse, the engineer engaged at the railway works which have brought these Columbaria to light. One of the urns exhibited was still unopened; the other was of black ware, with wreaths and other ornaments painted in white.

Some Spanish, German, and Italian weapons were exhibited, and some examples of the work of the Milanese armourers—a part of a steel war-saddle, engraved with the royal arms of Portugal, together with powder measures, spanners, plug bayonets, daggers, &c., by Mr. Bernhard Smith and Mr. R. T. Pritchard; also some weapons found in the Thames, brought by Mr. W. Burgess.

Mr. W. W. WYNN, M.P., exhibited some early documents relating to Wales; also a beautiful ivory diptych, with sacred subjects, from Valle Crucis Abbey; a set of counters, engraved with royal portraits, probably by Crispin de Pass.

Mr. H. BOHN showed an oval silver medallion with a portrait of Mary Queen of Scots, with the date 1580. The costume, &c., resemble those in a portrait of Queen Mary in the possession of the Duke of Devonshire, at the date of this medallion.

The Rev. E. L. BARNWELL sent a stone hammer-head, of white stone, being hard and bearing a high polish, the surface worked in grooves in a reticulated pattern.

Two silver matrices were sent by Mr. WATERTON, and a lock and key of Nuremberg work.

SOUTH KENSINGTON MUSEUM.—During the week ending 15th March, 1862, the visitors have been as follows:—On Monday, Tuesday, and Saturday, free days, open from 10 a.m. to 10 p.m., 13,085; on Wednesday, Thursday, and Friday, students' days (admission to the public 6d.), open from 10 a.m. till 5 p.m., 1,130. Total, 14,215. From the opening of the Museum, 2,551,502.

ON PICTORIAL MOSAIC AS AN ARCHITECTURAL EMBELLISHMENT.*

IT is now fifteen years since I had the honour of bringing under the notice of this Institute a branch of the art, upon another department of which I purpose making a few observations this evening. I was induced for some time prior to that date to pay attention to the subject of *geometrical* mosaic for two reasons—the one general, the other special. The general, because I looked upon any possible addition to the technical *plasmacopia* (if I may so express it) of the architect as conducive to the introduction of the most legitimate novelty in his art; and the special, because I recognised in the contemporary efforts making by enterprising manufacturers, and in a rapidly growing demand on the part of the cultivated public, every probability that an important branch of industry was incubating by the one, and likely to be hailed with welcome by the other.

A parallel conjuncture of demand and supply one cannot fail to perceive to be approximating at the present date in relation to pictorial mosaic; and in the hope that my humble exertions may contribute in some degree to the development amongst us of that branch of the art, as to a certain extent they may have done in past years with respect to geometrical mosaic, I venture to address to the meeting this evening a few remarks mainly limited to the practical interest of the subject.

It would, however, be an act of dereliction to the real grandeur of my theme if I failed to notice what important subjects of inquiry for the art-student, any such limitation necessarily precludes our taking cognisance of this evening.

Thus, firstly, there is the invaluable illustration which the series of still existing pictorial mosaics, dating from the earliest to the most recent Christian epochs, might be made to afford of the changeful spirit in which, at various periods, fervid faith has, as it were, assimilated to itself—now one, and now another, cycle of religious personifications of a more or less simple or complicated Christian mythology, sometimes veiling its aspirations in symbolism, and at others setting forth dramatically the leading events upon which its hopes and fears were based.

Next, perhaps, to this, which may be designated the liturgical interest of the art, is that which is more strictly speaking iconographical, including the much vexed question of the degree in which many of these generally rude but nearly imperishable pictures which survive, while almost every contemporary graphic record has perished, reflect the usual aspect, the costume, and true physical characteristics of the clergy and laity, the rulers and the ruled, in the early ages of Christianity.

Von Hülsen, in the "Italienische Forschungen," thus ably hints at the suggestive value of such primitive records—"There is, indeed, much in the representations of the early Christian mosaics which carries us back into extreme antiquity, perhaps into the very first century of the reign of Christianity. In these our Saviour, the Apostles, and Prophets invariably appear in complete classical costume,—in long tunics, with the palliums superposed, and with naked feet, protected only by the sandals commonly worn in imperial times. When recent saints are introduced, the habits of antiquity are exchanged for rich and more barbaric dresses, and the feet are usually completely covered. The value of these ancient types we find acknowledged by subsequent artists as celebrated and modern as Raffaele himself; for, as the same writer justly remarks, in the cartoons and in some of the most remarkable of the Vatican frescoes, we cannot fail to recognise an approach to the primitive forms of early Christianity, in the guise of a return to classical models, subordinated to the conventions handed down from the Church of the early fathers by tradition from artist to artist and from priest to priest."

Thus, thirdly, is there a purely archæological interest attaching to pictorial mosaics, connecting those decorations with the individual by whom or for whom they were executed, with the specific periods at which they were wrought, and with the structural peculiarities of the monuments they adorn. On this branch of the subject Ciampini, Farietti, and Spreti have left but little virgin soil for nineteenth century literary labourers to dig into.

Thus, fourthly and lastly, is there also an interest which affects us, as architects, more nearly, probably, than either the liturgical, iconographic, or archæological. I allude to the illustration afforded to the general history of graphic art by the numerous relics of pictorial mosaic which supply, for nearly every century from the Christian era downwards, an unbroken series of documentary evidence of those fluctuations of progress in design which, bridging over a mediæval chasm, connect ancient classical art with its revival under the great masters of the fifteenth century in Italy, and their disciples, to the present day. Having, in two addresses delivered before this Institute, one in 1847, and the other in 1855, dwelt at some length, although incidentally, on the position of pictorial mosaic in art history, I may trust to your indulgence for treating in general terms only, this really most interesting aspect of our evening's theme.

Having thus noted what I desire to eliminate, let me briefly define the point of view from which I would fain engage you to look with me at the whole matter this evening. That point of view is simply the one from which we may best realise what architects have to learn and to do in order to effect a practical revival of the art in the present day. In describing, in one of the addresses already alluded to, some of the mechanical operations of the ancient mosaic worker, I repeated in the year 1855 what I had first advanced in 1847—viz., that I saw no reason whatever why we should not carry out in the various processes of mosaic "exactly what the Greeks and Latins practised of old." If I was justified in that remark then I am more than justified now, for, as I shall hope to presently convince you, many practical difficulties formerly existing have been removed, and convictions as to the eligibility of the revival entertained by a few then are now heartily sympathised with by many, able, not to dream and desire only, but to work and to do. So strongly, indeed, is the current now setting in that I feel convinced it will be ere long incumbent on every architect practising in the higher walks of the profession to make himself acquainted with the best mode of dealing with what, when once adopted, will, I do not doubt, become the most popular means of adding the graces of colour to the refinements of form and proportion. Mural painting must in our climate ever have to contend with elements certain to shorten its ephemeral beauty. If attempted in real fresco, damp, fog, and frost speedily fasten upon its very vitals, tending to set the lime against the oxides and other pigments which in time are eaten away, as even in Italy we frequently see them, into nothingness. Fresco secco is still less permanent. Tempera, or distemper, I need not waste a word upon. Oil or encaustic painting involves the use of vehicles darkening, turning yellow, shrinking irregularly, and ultimately often detaching themselves from the ground to which they are applied. What, then, is left to us, if we would have our decorations live after we have ceased to live, but those processes, over the most delicate and the boldest pictures produced by which, experience has proved that a thousand years may pass "and steal no grace away."

I purpose now, in the first place, putting before you, in a summary form, the nature of such experience derived from the past, and, in the second, glancing at the various scopes and difficulties, of the art in its production and application.

The main historical phases of pictorial mosaic were the following seven:—1st, Classical. 2nd, Latin. 3rd, Byzantine. 4th, Greco-Italian. 5th, Italian Monumental. 6th, Italian Portable. 7th, Mosaic in *pavé* dure.

The first, or *Classical*, is, no doubt, well known to all present in its general aspect, but, as the foundation of all the other styles, it demands a somewhat closer view; the more especially, I think, because this closer view may enable the architect to realise some distinctive features in ancient decoration, revealed to us through no branch of art more distinctly than through mosaic. These features I essayed to deduce from ancient illuminated manuscripts in a paper read in this room in June, 1859; but they may be better recognised in the various remains of Classical mosaic. In the Roman decoration of imperial times two distinct schools may be traced, the one most ancient founded on Egyptian, Dorian, and Etruscan models, chiefly affecting monochrome combinations of black and red or buff, or delicately coloured subjects and ornaments on uniformly flat grounds; and the other rejoicing in the glowing tints and golden and spangled grounds of the East, popularised after the fashions of Ionian, Corinthian, Phœnician, and Syrian magnificence had given that taste for gorgeous costume which led to the substitution of the Babylonian embroidery and figured tissues in costume, and wall hangings, for the simpler stuffs in vogue in during the republican ages. Whether the art of fabricating

gold ground mosaic was of Oriental discovery, or whether, as is more likely, it was derived from the north of Africa—the nursery of the glass and enamel trade—are as yet unsettled points; but that it was freely adopted in imperial times is proved by the various specimens still existing at Pompeii and Naples. It is certainly curious to remark how devoted the ancients were to tessellation as a system, whether in their finest or coarsest examples. Large surfaces of uniform colour were invariably made up of small cubes, little varying in size in any portion of the work. No special labour is bestowed on fine joints, and no effort is made to disguise their effect by using coloured cement stoppings. The jointing was evidently accepted as an artistic convention, and with good taste and judgment it was kept regular, so as to prevent distracting the eye from the pictured forms; its lines were invariably made to subserve by contrast the effect of the flowing contours wrought upon it, and no effort was made by the use of large slabs, combined with tesserae, to save the labour or expense consequent on reducing the whole to one uniform gauge of size or rectangularity. This reduction of all to a common modulus is one of the sources of that appearance of flatness and repose which peculiarly marks all well designed pictorial mosaic. Such regularity is infinitely more important than fineness of works. The best specimens of the value of this adherence to gauge over large plain surfaces with which I am acquainted, are those noble black and white pavements, and wall and vault linings, which abounded in the Baths of Caracalla, at Rome. To those of my hearers familiar with such mosaics as those of the Battle of Issus, at Pompeii, of Pliny's Doves, in the Museum of the Capitol at Rome, of the fine pavement found amidst the ruins of Hadrian's Villa, at Tivoli, now in the Hall of the Masks in the Vatican; of the splendid arabesques and head of Minerva, brought from the site of Cicero's Villa, at Tusculum, and now in the Hall of the Greek Cross; it is needless to state that in all that constitutes perfection in graphic imitation, the fine *opus vermiculatum* of the ancients left nothing to be desired. Not only was form represented by light and shade, and local colour expressed by positive colour, but the utmost refinement of gradation in shadow tints and reflected lights was accurately copied from nature.

Even in that curious mosaic removed from the Temple of Fortune to the Barberini Palace, at the ancient Praeneste, now Palestrina, in which the learned have recognised the identical primitive specimen referred to by Pliny, in the words "*lithostrata caplaverna sub Sella arvali quod in Fortune delubro Praeneste fecit*," a great variety of colouring, and much minute execution in the animals, figures, and landscape are to be observed. For the production of such vivid and varied tints, natural self-coloured materials, such as marbles, stones, &c., could not suffice; and the skill of the glass-workers was, therefore, pressed into the service to enrich the mosaic worker's palette. For him not only were vitreous pastes prepared, glowing with every colour of the rainbow, but chemical processes for staining and tinting natural materials were brought into use; and finally, the vitreous pastes were overlaid with gold, covered in its turn by a thin film of pure white glass, which effectually secured the metal surface from contact with noxious gases or damp vapours. Not content with applying his incrustation to plane surfaces, the mosaic worker learnt also to adapt it to the varied forms of basso relievo. In this country, among the Pembroke marbles, at Wilton, we possess one of the few specimens known of this curious mosaic, which was at once sculpture and painting. Nor is it in such exceptional productions only that we are rich, since, in the more ordinary kinds of pictorial mosaic in which figure subjects are combined with flowing and conventional ornament, the soil of this country has teemed with valuable relics of the Roman occupation of our island. Of these, from my own portfolios, and through the kindness of many friends (Mr. George Maw being the one to whom I am most indebted), I am enabled to present for your notice this evening a very fair assemblage of representations. Among them let me direct your special attention to the following:—The magnificent head of Ceres, from Cornium (Circencester); the subject of Orpheus, from Winterton, near Lincoln; the Bacchus, at Thruxton, Hants; the scenes of the circus from Horkeston on Humber, Lincs; the head, full size, showing the tessellation, from Bignor, Sussex; the fine Bacchus from Stonesfield, near Warwick; the grand pavement from Littlecot, Wilts; and the Bacchus found on the site of the East India House, Leadenhall-street, now in the Indian Museum. The most remarkable specimens of Roman work brought to this country from other lands are, a few small pieces in the Temple collection, and the noble fragments of an extensive pavement, found at Carthage, by Mr. Davis, and now in the British Museum. In addition to the Italian examples, most of which have been engraved, many specimens exist in other countries. Among the best of these I would note the great pavement at Constantine, in Algeria; these found near Lyons, published by M. Artaud, and the Spanish varieties at Italica and Relves. I have dwelt on Classical mosaic at a greater length than I purpose doing upon any other species, because the careful student will find, I think, that evidence exists that every kind of technical process or artistic convention, applied at any subsequent period to the art, was known to and practised by the ancients.

The second variety of pictorial mosaic may be designated as *Latin*, since it long retained the marked peculiarities of style which distinguish Latin from Byzantine art. Thus, not in the choice of subjects only, but in the retention of the ruddy flesh tints, the deep brown shadows, and the stumpy figures and simple costumes of the decline of Roman painting, do such mosaics as those of the fifth century, at Santa Sabina, Santa Maria Maggiore, and San Paolo fuori delle mura, at Rome, differ from later specimens executed in the same city; if not by Greeks alone, at least by a preponderance of Greeks over the direct descendants of the original Classical mosaicists. M. Barbet de Jonny, of the Louvre, who has profoundly studied the subject, remarks that "the mosaics executed from the time of Constantine to the pontificate of Nicholas I., (A.D. 858) do not possess the Byzantine character." This, though partially correct, is far too sweeping an assertion; it suffices, however, to show that the separation in classification of Latin from Byzantine style in mosaics is essential to preserve a correct idea of real, not fanciful distinctions. The earliest Christian Latin mosaic known is that which lines the vaulting of the little baptistery of Santa Costanza, adjoining the Basilica of St. Agnese; and dated from the age of Constantine. It would be extremely difficult to say which was the latest.

The more closely the matter is studied, the more evident it becomes that a distinct Latin influence in the history of art is to be traced, running beside, mingling with, but never altogether losing its identity in, the great tide of progress which swept from a thousand springs and sources over the whole continent of Mediæval Europe. Thus, amongst existing remains of the middle ages we may point to three in particular, in which many of the Latin peculiarities of mosaic working have been faithfully preserved to a comparatively late date—one in the north of Italy, and the other two in that district over which we may frequently recognise traces of the influence exercised by the long flourishing Latin schools of Aix-la-Chapelle and Cologne. In the pavement of the Cathedral at Novara, a work executed at intervals probably between the beginning of the twelfth and the middle of the thirteenth centuries, we meet with a very fair reproduction of a black and white Classical pavement. In various medallions are birds and allegorical figures, of one of which I produce a fac-simile traced by Mr. George Maw from the original. From this may be readily observed the coincidence which occurs between the tessellation of the Novara pavement and that of the ancient pavements of Pompeii, such as I have sought to reproduce in the Crystal Palace, at Sydenham. It is probable that a somewhat similar mosaic pavement, with figures representing Rhetoric, Logic, Prudence, &c., and a Zodiac, was formerly in the church of St. Irene, at Lyons; a city in the neighbourhood of which many fine Classical mosaics existed, which might have well served as models for this mediæval specimen of tessellation.

In the year 1831 extensive excavations, fully described in the work of M. Wallez, were commenced to uncover the crypt and choir of one of the ancient churches of St. Bertin, at St. Omer. These had bare one of the most interesting monuments of art ever exhumed in France. A reference to the engravings taken from M. Wallez's learned work will show at once the nature of the pavement, which represented, by a regular classical tessellation of black, red, yellow, and bluish grey, executed in terra-cotta, stone, granite, and marble, the Zodiac surrounding a square, divided diagonally by conventional ornament, and containing three medallions and a monumental slab in the several triangles so spaced out. Of these the most interesting is the monumental slab, which is covered by a figure of William, son of Robert Count of Flanders. Time does not permit of my dwelling in detail upon the workmanship of the medallions, which show a curious transition from the mosaic to the purely incised slab pavements; but I may be permitted to congratulate France and its archæologists upon the fact that the date of 1108, wrought round the supine figure of Prince William, leaves no doubt as to the retention at that period of

* Read by Mr. M. DEBY WYATT, V.P., at the Royal Institute of British Architects, on the 17th of March.

workmen perfectly capable of imitating in mosaic the important fragments of classical mosaic which served, so far as processes of manufacture, and ornament, are concerned, as models for the execution of this precious work. The third rare specimen of mediæval Latin mosaic is the monumental slab of Frumaldus, Bishop of Arras, found in the Cathedral of St. Waast, at Arras, in 1835, and now preserved in the museum of that city. Frumaldus, who died in 1183, is represented standing and in full episcopal costume. The details are worked out, as you may observe by an inspection of the elaborate coloured plate given in Gallabaud's "Architecture et les Arts qui en dépendent," in tesserae, among which are many obviously gilt. One peculiarly classical feature, the retention of which would go far to prove a Latin rather than a Byzantine tradition for this work, is to be noticed in the strong black outlining of the figure. I am not aware of the existence of any inter Latin tessellation than is shown in these three examples.

We come now to our third species—Byzantine mosaic—which includes all that was done in Greece and Asia Minor, and much that was done in Italy, from the transfer of the seat of empire in the year 329 until the Italians began to learn from the Greeks to practise the art for themselves. History tells us that Constantine took artificers to Constantinople with him skilled in all the arts of Rome, and hence we naturally find that the earliest Byzantine monuments can scarcely be distinguished from the Classical; but the new soil and the old soil soon caused the same parent stock to bear very different fruits—Byzantium rose as Rome sank. No doubt a freer intercourse with the nations of the East, and more especially with Persia, soon led the Greeks to engrave enhanced brilliancy on their fading recollections of classical art; and gorgeousness in costume, in textile fabrics, in illuminated manuscripts, and in pictorial mosaic, soon usurped the foremost place, once assigned to severer sources of beautiful effect. To the pages of Hooper, Lord Lindsay, Gally Knight, Von Quast, Salzenberg, and Ciampini, I must refer my hearers for detailed information upon the productions of the Byzantine mosaic workers, contenting myself with noting that it is in their earliest labours at Santa Sofia, at Constantinople, and in the churches of San Nazaro e Celso (the tomb of Galla Placidia), San Vitale, and the two churches of San Apollinare di Fuori, and di Dentro, at Ravenna, that the finest models for our imitation are to be met with. Byzantine pictorial mosaic is exclusively upon gold ground, and there is ample evidence that from the date of the commencement of the iconoclastic troubles in 742, when multitudes of Greek artists and monks were driven out by persecution to seek a precarious living in foreign countries, the staple of such work was invariably executed, and the necessary materials probably manufactured by these itinerant mosaicists. What are to be peculiarly admired in the Byzantine interiors are the breadth of decorative effect invariably aimed at; the good proportioning of the scale of the pictures and ornaments to the distance from which they require to be viewed; the judicious use of bands, margins, and string courses, to keep their compositions distinct and make them subservient to an architectonic disposition; and the judgment with which they invariably accentuate or emphasise leading architectural features. For instance, nothing can be happier than the mode in which they almost always treated the soffits and faces of arches, and the arcades or salient angles of vaults. Many of these may be seen in the sketches now submitted, the whole of which were executed by me from the original models. No arrangements for decorative form can be happier than such as exist in some of the cupolas of St. Mark's, at Venice, of which I offer to your notice, after the conclusion of my paper, some careful sections taken from Krutz's elaborate work.

Next to Constantinople and Ravenna, Rome certainly offers the noblest specimens of Greek work, done probably to a great extent through the "Scuola Greca" established by Pope Adrian I., A.D. 782, and attached to the church of Santa Maria in Cosmedino. As if to reward the patronage of the Pontiff, the great mosaic of Santa Pudenziana, done in his days, is by far the best in which the Greeks appear to have played the leading part. The mosaics executed at Rome for the next three centuries, although numerous and on a grand scale, exhibit—with the exception, perhaps, of those of Santa Prassede—a marked falling off. In those of the apse of San Clemente, carried out early in the thirteenth century, a decided revival is manifested, but destined to burn brightly for a short time only, being, as it were, almost the last burning up of the already waning flame, which had for so many centuries shed a brilliant light from the capital of the Eastern empire far and wide over the Continent of Europe.

We now come to the fourth or Greco-Italian series, which are important on two accounts—firstly, because they illustrate a gradual emancipation from tradition in the limitation of subjects and action; and, secondly, because they constitute the transition, which ended in the transfer of the art, from one nationality peculiarly fitted to maintain technical efficiency, to another not less qualified to graft pictorial excellence on mechanical precision and perfection. The first mosaics executed in Sicily—those of the church of the Admiral, and of the Capella Palatina—bear Greek inscriptions, and were wrought by Greeks in the first exclusively, and in the second, probably, under the guidance, as to design, of Saracenic artists.

For the later and far more extensive works at Monreale and Cefalù, the mixed races, protected under the Norman dominion, each contributed their quota of skill. The Duca di Serradifalco and Ciccognara agree in recognising the influence exerted on Pisa by the advance made in Sicily; and through Pisa, Sienna, and Florence, were ultimately unquestionably stimulated to rapid advance in art. The cathedral at Monreale, a beautiful drawing of the interior of which, by the late Herr Zanth, was bequeathed by him to this Institute, offers, I believe, next to Santa Sofia, at Constantinople, and St. Mark's, at Venice, the noblest and grandest instance of a church decorated throughout with mosaic. Having worked hard in it for many a day from dawn to sunset, I can bear a humble testimony to its invariable beauty under every changing condition of light and shade. Whether bathed in sunshine and all alive with glowing colour, or almost dark, at closing day, retaining to the last some lingering gleam upon its gilded wall-faces, its aspect is one not of gaudiness nor gloom, but of serene and dignified magnificence. As in Sicily, so in Venice, the art was at first kept entirely in the hands of Greeks, who not only worked at St. Mark's, but at Torcello and Murano as well. In the latter island they no doubt laid the foundation of the glass trade, previously a Constantinopolitan monopoly, so far as the more difficult branches of the manufacture were concerned. From the Murano glass-houses, from the Scuola Greca, at Rome, and from a manufactory established at Palermo, as well as by direct importation from Greece, the materials were supplied with which the Greco-Italian mosaics were executed. The profits made by the itinerant Greeks in Italy, coupled with an increased demand for works of decoration, consequent on the wealth accumulated by the Northern Republics through trade gains, soon caused an attempt to be made by the Italians to break up the Byzantine monopoly.

The success of this attempt led to the development of the fifth species of pictorial mosaic, which I have designated *Italian Monumental*. It was in Florence, early in the thirteenth century, that the transfer of the monopoly was consummated. Andrea Tafi, a Florentine, having insinuated himself into the confidence of certain Greeks working on St. Mark's, at Venice, prevailed at last, as Vasari says, "*con preghi condottuari, e con promesse*," on a certain Apollonius to go to Florence and work with him upon the mosaics which still line the vault of the Baptistery in that city. A rival of Andrea's was the even more celebrated Mino da Turrita, who, having gained an earlier, although probably less accurate knowledge of the Greek processes, preceded Andrea in working on the Baptistery. Subsequently, Gaddo Gaddi was employed as an assistant on these works; and by these artists, and by their pupils, and pupils' pupils, almost all the pictorial mosaics subsequently executed in Italy were carried out. Among such may be specially noticed, as combining fine execution and decorative colour with really good art, the splendid aerie lining of San Giovanni Laterano, and Santa Maria Maggiore, at Rome, executed by Mino da Turrita and Gaddo Gaddi, by the latter of whom Giotto's celebrated "Navicella," at St. Peter's, was also wrought.

So highly did the Italians esteem the products of Andrea's combined talent and cunning that after his death they honoured him with the following epitaph:—

"Qui giace Andrea, ch'opre leggiadre e belle
Fecè in tutta Toscana, ed ora è ito
A far vago lo regno delle stelle."

Pietro Cavallini and the Cosmati subsequently obtained reputation by their mosaic, principally at Rome; the latter working in the Gothic manner altogether. I have every reason to believe that the Greeks continued to labour at Venice long after their services were dispensed with in other cities of Italy; although after 1400, I think the work at St. Mark's to have been altogether Italian. With the uprising of the great school of fresco painting, the employment of mosaic, a far more costly decoration, was, to a great extent, dispensed with; although at Pisa, Orvieto, Sienna, and Rome, both styles of mural cul-

bellishment are constantly to be seen together. Their union is not, however, to be admired, owing to their unequal durability, the permanence of the colour of the one frequently making needlessly conspicuous the fading or staining of the other. The best early Renaissance monumental mosaics with which I am acquainted, are those from the designs of Raffaele in the Capella Chigiana, in Santa Maria del Popolo (illustrated in colour by Mr. Gruner), and the vault of a subterranean chapel in Santa Croce, in Jerusalem, at Rome, the design of which is attributed to Baldassare Peruzzi. The best late Renaissance mosaics, on a grand scale, are unquestionably the magnificent decorations of the vast cupola and pendentives of St. Peter's, models which one would fain see rivalled, not slavishly imitated, in our great metropolitan cathedral. For the production of the Papal mosaics, a *fabrica* or Government establishment was founded, which has not failed up to the present time in providing materials and labourers equal to the repair of old, and the initiation of new work equal in all respects to, and surpassing in some, the peculiarities of each style we have hitherto noticed.*

THE EMBANKMENT OF THE THAMES.

ON Wednesday, in the House of Commons, Mr. COWPER, in moving for leave to bring in a Bill for embanking the north side of the Thames from Westminster-bridge, and for making new streets in and near thereto, and from Blackfriars-bridge to the Mansion House,* referring to past proceedings, said that one of the most pressing wants of the metropolis was a good thoroughfare between the City and the West-end. Ludgate-hill, Fleet-street, and Temple-bar did not now serve the purpose for which they were intended; and, in consequence of the value of property in those thoroughfares, to widen them would almost be impracticable. The embankment that he proposed would also provide for the laying down of a low-level sewer, without the necessity of breaking up the pavement of the Strand and Fleet-street, to the danger of the houses and public buildings. A third object might be combined with these two, namely, the improvement of the navigation of the Thames; and a fourth, the embellishment of the river, and the establishment of a healthy place of recreation for the people residing on the north bank of the river. One of the noblest features of London, and the source of its wealth, was its river, and it might be supposed that Londoners would be proud of it, and have done all in their power to improve and adorn it. The Liffey, which could not be compared to the Thames in size, had been adorned with beautiful quays. Paris, St. Petersburg, Stockholm, Florence, and other Continental cities had done the same for the rivers on which they were situated; but in London little had been done, though he believed the discussion had lasted for nearly two hundred years. Sir Christopher Wren, in 1666, having proposed that a quay should be constructed from London-bridge to the Temple, and similar projects having been repeatedly revived. In 1860 the subject was again renewed in that House, and a Committee was appointed to inquire into the subject. They recommended an embankment between Blackfriars and Westminster, and suggested the coal duties as the source from which the expenses should be defrayed; but they did not recommend a plan. Last year a Royal Commission sat, which not only recommended an embankment generally, but the specific plan to which the Bill he desired to introduce was intended to give effect, and which he had no doubt was the best plan that could be devised. Its main advantage was, that it did not attempt to retain the wharves, as had been intended in all earlier plans; but it was proposed to buy up all the wharves, and make a solid embankment with an ordinary roadway. Another feature would be the extension of the roadway from Blackfriars-bridge to the Mansion-house, as a mere embankment to Blackfriars-bridge would not divert the traffic which impeded the thoroughfares he had mentioned. It was at first proposed that the embankment itself should proceed further than Blackfriars, but the river was so narrow between Blackfriars-bridge and Southwark that such an embankment would be injurious to the navigation, and the property between Southwark-bridge and the Mansion-house was so valuable that the expense would not be compensated by the advantage. The funds from which the work was to be executed were those provided by the London Coal and Wine Duties Continuance Act, passed last session. He proposed that the execution of the Act should be entrusted to the Metropolitan Board of Works. He knew that objections had been urged against this; but it seemed to him that the Board had been created by the Legislature expressly for this sort of work, and that there was no other body in existence to whom it could be more properly committed. It had been objected that the Board were too much occupied. The Bill, however, provided that the executive work should not devolve upon the whole Board, but upon a committee of nine to be appointed by themselves. It had been suggested that the embankment should extend as far as Battersea or Vauxhall. After the execution of the present bill, there would only remain the small portion of the river between Westminster-bridge and Millbank-street, which would be without an embankment. They might, therefore, reasonably hope that this small portion would, in a few years, be embanked, and there would be a clear field extending from Blackfriars-bridge for a distance of four miles. He thought this would be as splendid and magnificent a range as was to be found anywhere. It was not proposed at present to do anything with regard to the south side of the river. A commission was sitting on the subject. They had been hearing a great deal of evidence, but had not yet agreed to their report. It would therefore be premature to form an opinion as to what ought to be done. Among the advantages which would be gained by the embankment would be the throwing open to the public of considerable open spaces of grass and trees by the side of the river. When the sewage was completely removed from the river these places would become spots where enjoyment and healthy recreation could be obtained. Altogether the improvement to the metropolis would be very great. It was proposed not to fetter the Metropolitan Board of Works with any control or interference beyond that which arose from the fact that the funds derived from the coal duties was at present in the hands of the Treasury. The Bill would enable the Treasury to pay the money over to the Board of Works.

Mr. WILLIAMS was sorry to hear that the right hon. gentleman did not propose by his Bill to embank the south side of the Thames, and hoped that a provision to effect that object would be introduced into the Bill; and Mr. LOCKE urged the propriety of due consideration being given to the effect which the embankment of the north side of the Thames must have on the south side of the river.

Mr. COX called attention to the injury which would be inflicted upon persons occupying premises and engaged in trade along the river side by the proposed embankment. Those persons must remove to a distance, and have carts and waggons running from their yards to the side of the river. The new road which

* To be continued.

it was proposed to make in continuation of the embankment would be of no use, and would cost a great deal of money. He was exceedingly anxious to see great improvements carried out in the metropolis, but he thought that the proposed one, instead of being an improvement would become a nuisance. That was his opinion of it as regarded the southern side of the Thames; Mr. CONINGHAM could not conceive a greater metropolitan improvement than the one now proposed, and he should give the right hon. gentleman his support in carrying this measure.

Mr. KINNAIRD also believed that the proposed embankment would be most useful and beneficial, and thanked the First Commissioner of Works for the attention he had given to the subject.

Leave was then given.

THE MANAGEMENT OF OUR SCIENCE AND ART INSTITUTIONS.

IN the House of Commons, on Wednesday, Lord H. Lennox moved that the House is of opinion that, for the preparation of any estimates, and for the expenditure of any moneys voted in aid of the British Museum, the National Gallery, and all other institutions having for their object the promotion of education, science, and art, one Minister of the Crown should be responsible to the House, pointing out, in a long and interesting speech, the anomalous position in which each of these institutions was placed as regarded their government and their representation in the House. The motion was seconded by Mr. Gregory, who dwelt on the irregularity, the want of system, and the absence of responsibility in reference to the conduct of our public works, and expressed his belief that the present motion would be the foundation of an improvement in the management and administration of those institutions, for the consideration of which he pointed out that the present session afforded a favourable opportunity. He especially dwelt on the mismanagement of the British Museum, and urged alteration in its administration.

The Chancellor of the Exchequer said that a new arrangement was made in 1860 with regard to the National Gallery, which it was open to the House to have questioned at the time. As regarded what he might call the indictment which had been laid against the British Museum, he denied that the charge of general mismanagement was sustained by evidence. He contended that the mere fact of that institution being represented in Parliament by a private member of the House did not detract from the responsibility of the preparation and production of the estimates relating to it, while the Government was also responsible for them. He stated that shortly a proposition would be laid before the House relating to the British Museum, which would bring that institution under discussion and enable the House to decide upon that which was proposed.

Mr. Coningham asserted that on all occasions the House had had the control of the expenditure of these public institutions, and had by its acceptance of the estimates confirmed the authority of their administrators; and Mr. Blake complained of the attempt which had been made to make schools of art or design self-supporting, contrary to the usual practice with regard to other branches of public education.

Mr. Disraeli said that while approving of the resolution, which was calculated to do good, he thought it would be desirable not to press the motion to a division. As it had been met by the previous question on the part of the Government, that was equivalent to an admission of the truth of the principle contained in it, and with that he thought his noble friend might be satisfied, as he had practically established his proposition that the management of these institutions generally was not satisfactory. While admitting that such institutions as the National Portrait Gallery and the National Gallery might well be placed under the control of a responsible minister, he thought that scant justice had been done to their present administrators. As regarded the British Museum, although its administration was somewhat anomalous, yet he did not consider it so faulty in action as had been asserted, and the unsatisfactory state of the Museum was inseparable from its origin and multifarious character.

Eventually the motion was withdrawn.

THE SUEZ CANAL.—A letter from Cairo says:—"M. de Lesseps, President-Director of the Suez Canal Company, gave a grand banquet on the 2nd ult. to all the officials and workmen, native and others, in commemoration of the opening of the canal by which the waters of the Nile had been brought into the centre of the Isthmus. Three days before, M. Lesseps left Cairo, descended the Nile as far as Bannah, and after passing through the Canal of Ouadée, entered the new canal, and landed on the plateau close to the town of Tynsah. The journey from Cairo was performed in forty hours, and by means of this new canal navigation is now open from the Nile to the centre of the Isthmus. The number of persons assembled at the banquet was about 200, the place chosen being the banks of the Lake of Tynsah, where large tents were erected for the occasion. At the dessert, M. de Lesseps addressed the company, pointing out the advantages which would result from the completion of this canal, and the greater benefits which would hereafter be produced by that across the Isthmus." The reports current respecting the operations of the Suez Canal Company become more and more unfavourable. The small channel, or *rigote de service*, dug through Lake Menzaleh, is already almost entirely obliterated. Whatever embankments had been raised on either side have been washed away, and the small boats that occasionally attempt the passage find themselves every now and then stuck fast in the open but shallow lake. The approaches to Port Said are in as unpromising a state as ever, and the cutting through the sand heights of El Gier, it is found, must be attempted, in spite of its acknowledged difficulties and disadvantages; and it is now altogether vain for the projectors of the scheme to talk of English jealousy and animosity.—*Engineer*.

CAST-IRON SLEEPERS FOR RAILWAYS.—A modification has just been introduced into the system of French railways, which there is some probability will shortly be adopted by the principal companies of this country. It has long been proposed to substitute cast-iron sleepers for the wooden ones now almost universally adopted, but this substitution has been hitherto regarded as impracticable, on account of the rupture occasioned by shocks, &c., but a felt packing has been applied which effectually prevents all risk of fracture. Experiments and trials on the Paris and Lyons Railway have proved that after eight months' continued traffic, the system was perfectly successful. The economy resulting from the employment of iron, would be, it is said, from 50 to 60 per cent.

Correspondence.

A NEW FURNACE FOR BOILERS, &c.

SIR,—I desire to record a remarkable circumstance attending the supplying of furnaces with heated air which has been hitherto unnoticed, or at least not made public; it differs from the hot blast for smelting purposes. The heated air is obtained by keeping the ash-pit entirely closed, except when opened for removing ashes; and an arrangement for passing one or more streams of air from the back of a boiler bed through separate passages in the solid brickwork beneath the entire length of the lowest fire flues, from thence into the ash-pit, and through the bars into the furnace. The result derived from this description of furnaces, when applied to heating gas retort beds, may surprise your readers, who would probably suppose that it would occasion increased trouble with clinkers, the great object now being to check their formation by using evaporating pans in the ash-pit, which mode causes clinkers to become very hard, their removal often breaking the brickwork; whereas, by their totally reversing the usual mode, and drawing out the heat absorbed in the solid brickwork, and that radiated from the floor of the furnace, and repassing it through the bars, clinkers are formed of so soft a nature as to be clearable from the bars with a rake. In fact, with one exception, firemen attending on these furnaces have told me they would sooner have charge of two altered furnaces to one of the common kind. I believe when this becomes known and tried it will be generally appreciated.

GEORGE WALCOTT, C.E.

Reviews.

Proceedings of the Liverpool Architectural and Archaeological Society.

THE Liverpool Architectural Society have published the proceedings of the thirteenth session—1860-1861. The volume contains full reports of the papers read, which are of an unusually important character, together with a report of the annual meeting. There is also an index and title-page of the proceedings of the last three sessions, which have been printed in the new and reduced size, and which together now form sufficient matter for a volume of moderate size.

The Council augur favourably with regard to the future well-being of the Society, and feel justified in recommending the question of issuing illustrations with future "proceedings" to careful consideration.

DECISIONS IN THE COURTS.

DISTRICT SURVEYORS' FEES.

Badger v. Bowley Brothers.—*Greenwich Police Court.*—In this case, heard on the 11th inst., the summons was granted under Sec. 51 of the Metropolitan Building Act, 13 and 19 Vic., cap. 122, for recovery of two fees of £4 11s. 3d. each, claimed by complainant as district surveyor, in respect of alterations and works done by defendants at the Longton Hotel, Sydenham, in April and May, 1861, under the superintendence of Mr. J. W. Dennison, architect.

Mr. Venn, solicitor, of New-Inn, Strand, appeared for defendants, who denied their liability to pay the second fee in complainant's account, which was claimed "for alterations to roof of building by permission of Board of Works."

Complainant stated that on the 4th of April he found defendants engaged on the works (which had been commenced without any notice to him), and that at this date the roof above some stabling had been covered with an external covering of asphalt, to which he objected, as being combustible: that the architect applied to the Metropolitan Board of Works, who eventually gave their consent to the roof being temporarily left in that state; that defendants, on the 17th of April, gave him a notice applying to the chief portions of the entire work, which was in progress, and offered to pay his fee—but complainant claimed an additional fee for the alteration to the roof discovered on April the 4th, upon the ground that it was a separate matter, and was under his supervision as district surveyor.

Mr. Venn, for defendants, contended that, as asphalt was used in the former covering of the roof, the covering placed by defendants was not in itself an "alteration" within the meaning of Sec. 9 of the Statute, but was "a necessary repair not affecting the construction," and for this a notice would not be required, and that, even if held to be an alteration, it merely formed part of one set of works in progress at the same time, without any suspension, and that therefore only one fee was payable; further, that if defendants had acted illegally by placing the covering on the roof before giving their notice, the district surveyor should have taken steps to enforce the penalty imposed by the Statute, but could not recover double fees.

Evidence being given by defendants that the covering to the roof was a part of the entire work entered upon, and which had been continuously performed without any suspension, the magistrate, upon this ground, decided that only one fee was payable, but declined to express any opinion as to whether the covering to the roof was or was not in itself an "alteration" within the meaning of the Statute.

PRESERVING TIMBER.—M. de Lapparent has addressed a report to the Minister of Marine on the preservation of timber employed in the construction of ships, and proposes a remedy, which consists in the carbonisation of the timber used in shipbuilding. The manner in which he proceeds to carbonise the timbers and the secret which he retains, is by employing "an inflammable gas," which is applied to the timber in a certain manner. It is said that the experiment made at Cherbourg in presence of M. Sochet, director of naval constructions, was completely successful. One essential advantage of the plan is the absence of all danger, which is a chief point in an arsenal. It is estimated that the expense will not exceed 10c. the square yard—gas and labour included. It has been further ascertained that one workman can easily carbonise 40 square yards during a day's work of 10 hours. Finally, the carbonisation is uniform, and it does not exceed a quarter of a millimeter in thickness.

BROMPTON-ROAD IMPROVEMENT.—A circular letter has been addressed to the inhabitants of Brompton and South Kensington, stating that the Turnpike-road Commissioners propose, at their own expense, to widen the Brompton-road, from Knightsbridge-green (close to Sloane-street) to the Bell and Horns (near the South Kensington Museum). The Kensington Vestry undertake to widen the footpaths abutting on the improved road. The Turnpike Commissioners attach to their proposal the condition that the land required for the widening of the road should be delivered to them free of cost. The greater part of the land required consists of small plots of waste ground, abutting on the road; but the value of this, it is conceived, will be more than compensated by the great additional value to be given to all the adjoining property by the improvement of the foot and carriage way. To complete the work, however, some buildings must be removed, and to the owners of those buildings compensation must be made. The Committee, therefore, appeal for a subscription by the inhabitants of Brompton and South Kensington to make up the sum required to put the Commissioners in a position to carry out the improvements.

IMPROVEMENTS IN BUILDING, &c.

EXTINGUISHING OF FIRES IN WAREHOUSES AND OTHER BUILDINGS.—Dated August 3, 1861.—E. Tomlinson and G. W. C. Wilson, Liverpool.

To apply this invention to, say a warehouse, the inventors connect to an underground high-pressure water main, or to an elevated reservoir, a supply pipe which is carried to the side of the warehouse, and, say about 3 feet or 4 feet above the level of the parapet, where it opens into a recess formed in the side of the warehouse, and which may be fitted with a lock-up door. A suitable length of pipe is placed horizontally upon the head of the vertical pipe (forming a T-shaped head), and to which distinct branch pipes leading to each room or floor are connected. These branch pipes are fitted within the lock-up box with suitable stop cocks and handles, numbered correspondingly with the rooms above, and which, upon the discovery of fire in any of the rooms, may be turned on by, say the policeman on duty, who is supplied with a key to the lock-up box. The pipes may be placed in any convenient position within the rooms, say along the ceiling in rows, or connected together by transverse pipes; these pipes are perforated with a large number of holes in any convenient manner. By these arrangements a large quantity of water may be immediately supplied to any of the rooms either separately or collectively, as required, and these perforated pipes may also be applied to the inside of the roof of the buildings.

WINDOW SASHES.—Dated August 7, 1861.—D. Miles, Newport.

The patentee claims the combination of parts tied or kept together by metallic tongues, forming, when complete, a rigid and secure window sash, and permitting, on the withdrawal of the said metallic tongues, both the upper and lower sashes partially to revolve, in order that either side of the glass may be cleaned from the interior of the room or chamber at pleasure. Also the combination of parts in using which he dispenses partly with the metallic tongues for the lower sash, or for both upper and lower sashes, and uses a spring catch, or two spring catches, in lieu thereof. Also the combination of parts by which he causes both upper and lower sashes to present singly or together either face of the glass to the interior of the chamber, substituting the use of spring catches in lieu of metallic tongues.

COVERING FOR HOUSES, &c.—Dated 7, 1861.—N. A. Lessueur, Paris.

This invention consists, principally, in giving to bricks, tiles, &c., by means of grooves, notches, or mortices cut in dovetail, the faculty of being set and fixed rapidly, solidly, and economically.

THE CONSTRUCTION OF DOORS, GATES, AND SHUTTERS, PRINCIPALLY APPLICABLE TO FIREPROOF BUILDINGS.—Dated August 8, 1861.—W. S. Hogg, Kotherhithe.

This invention consists in forming the above-mentioned articles of parallel iron or other metal bars, related or grooved to receive bricks or other molded forms of earthen materials. In many cases ordinary bricks will answer the purpose perfectly well, and may be variously disposed according to the structure required. The parallel iron bars are combined with an external iron framing of the form and size desired.

PROTECTING AND ARRANGING WATER PIPES, AND MECHANICAL CONTRIVANCES FOR WITHDRAWING THE WATER FROM THE SAME AND PREVENTING THEIR BEING INJURED BY FROST.—Dated August 3, 1861.—G. F. Jones and J. Jones.

This invention relates, first to supply pipes. It being usually inconvenient or impracticable to place these sufficiently deep in the earth to be beyond the influence of frost, the patentees protect the same by coating them with, or embedding them in, some one or other of the substances which are the slowest conductors of heat (such as felt, straw, or hay bands, india-rubber, fine dry sand, or sawdust, clay, salt, or alum), and when required, enclosing these in earthenware or wooden pipes or casings. Just where the protection due to depth ceases, the supply pipe is to terminate in a cylinder placed horizontally or obliquely, having a piston which, when pushed towards and left at the outward limit of its stroke, shall permit the free passage of the water from the supply pipe to the house main, and when drawn to its inward limit, and held so by weight, shall stop and prevent the supply, at the same time permitting the water contained in the house mains and branches to return to the cylinder, and thence to run off by a waste pipe with a drain, which waste, during the admission of the supply, is closed by the periphery of a second piston open longitudinally, travelling simultaneously and commensurately with that first mentioned.

FIRE-PROOF BUILDINGS.—Dated July 25, 1861.—J. Simmons.

In carrying out this invention the inventor proposes to make the cast-iron girders and columns used in supporting the various floors hollow, and to connect them together in such a manner as to form a clear watercourse throughout the whole series. The tubular columns he carries up from the basement to the roof, where he connects them with a water-tank that may cover any given surface of the roof, and these lines of columns he also connects with a series of hollow girders, which serve to carry the several fire-proof floors. He brings down water from the tank to the basement of the building by suitable pipes running either outside the building or enclosed in brickwork, so as to be protected from the action of fire in the building, and at the basement he connects this supply with the vertical columns which carry the hollow girders. By this arrangement, should a fire occur in any part of the building, the adjacent hollow metal supports will become heated, and the water contained therein will be caused to circulate, a heated stream floating upward, and cold water taking its place, and absorbing the heat imparted by the fire to the metal. Thus the temperature of the metal will be effectually kept under, and a discharge of water on to the exterior of the metal will in no way affect its stability.

MACHINERY FOR CUTTING WOOD.—Dated July 23, 1861.—R. Thompson.

This invention consists in an arrangement of machinery whereby revolving cutting tools for chiseling, grooving, moulding, and other similar work, can be moved (while in the operation of cutting or otherwise) in any direction required by the workman, giving him complete command over the tool to follow any line of cut traced out, without in any way interfering with the revolving action of the cutter or the driving power. The principle consists in mounting the cutting tools in a carrier or traverse block, such block being free to travel along a beam, revolving motion being communicated to the cutter by a gut or band in the following manner:—Motion is communicated from the driving power to a double-grooved pulley revolving freely upon a shaft, upon which shaft one end of a beam is pivoted. A second gut or band passes round the other groove of the double pulley, thence entirely round, so as to grip a pulley attached to the cutter holder, thence round a third pulley upon the opposite end of the beam, and back, past, and clear of the cutter-holder pulley to the first pulley. The traverse block or carrier can thus travel along the beam, carrying with it the cutter, without interfering with the revolution of its pulley.

FOR PREVENTING THE WIND DRAUGHTS AT THE FOOT OF DOORS, AND ALLOWING THEM TO OPEN OVER CARPETS OR OTHER SUBSTANCES WITHOUT THE USE OF RISING HINGES.—C. A. Wheeler.

This invention consists of two pieces of moulding the width of the door, made in any kind of wood or metal, the lower or bottom piece being much stouter and heavier than the upper piece, and they are attached to each other by cords or chains, leaving a space between the two pieces of moulding to allow the lower moulding to rise and pass over the carpet, or any other substance the door may have to travel over. The upper piece of moulding is made fast to the face of the door by screws, or nails, or brads, suspending the lower piece of moulding one-eighth of an inch or more from the floor; and in front of these mouldings, between them and the door, is a piece of an air-tight cloth, or india-rubber, or other flexible material the width of the door, which flexible material is attached to the upper piece of moulding, or to the face of the door, and which rests upon the floor. The lower piece of moulding, being suspended in the manner already described, rises and falls with the opening and shutting of the door, and presses against the flexible material, preventing any wind or draught from entering the room.

WATERCLOSET AND URINAL APPARATUS.—N. Common.

Here the inventor uses an air-tight vessel in which water sufficient for one discharge is collected as the water accumulates, air contained in the vessel is compressed, so that when the discharge takes place the water will rush out with a force due to the degree of compression of the confined air.

TENDERS.

DWELLING-HOUSE, ANERLEY.

For erecting a dwelling-house in the Oakfield-road, Anerley. Mr. George Elkington, architect. Quantities supplied by Mr. H. A. C. Herring.

Luscombe	£1,476 10	Keat	£1,277
Downs	1,370 0	Corder	1,265
Barrett	1,297 0	Thompson (accepted)	1,230
Coleman	1,279 0		

MANSTON, OMAGH (IRELAND).

For additions and alterations to Seskanore House, near Omagh. Messrs. Boyd and Batt, architects, Belfast and Londonderry.

Mullin	£2,500	M'Gauchey	£2,100 0 0
Fergusson	2,332	M'Clelland (accepted)	2,074 10 5
Stewart	2,181		

ALTERATIONS, DUBLIN.

For alterations to a house in Grafton-street, Dublin. Mr. Hoane, architect.

Clarke	£350	Grant and Lennon (accepted)	£325
Drysdale	343	Smith	320

POLICE STATION, COVENTRY.

For a new police station at Longford, near Coventry. Mr. William Kendall, county surveyor.

Dutton	£1,330	Fox	£1,164
Robinson	1,297	Hallam and Price	1,125
Marriott	1,240	Potter	1,029
Matthews	1,175	Storer, Junr.	934

BRIDGE, LEICESTER.

For the ironwork and fixing for a cast-iron girder bridge of 42 feet span, average width between parapets, 27 feet 6 inches, for crossing the river Soar, at Leicester. Mr. E. L. Stephens, borough surveyor, engineer. Quantities supplied.

Dunn	£828 0	Haywood	£555 0
Cochrane	765 0	Sharran	445 0
Swingler	705 0	S. Pegg	420 0
Stapp	649 0	J. Pegg and Co.	400 0
Handyside	630 0	Grimsons	398 10
Galloway	600 0	J. and R. Cliff	392 10
Head, Ashby, and Co.	600 0	Law and Sons	360 0

REPAIRS, &c., PICCADILLY.

Repairs and alterations, 3, Little St. James-street, Piccadilly, for J. Dobson, Esq. C. J. Adams, architect.

Clements	£158 8	Williams (accepted)	£131 0
		Architect's estimate	£140

DWELLING-HOUSE, STRATFORD.

For house at Maryland Point, Stratford, for Mr. J. Wood, of Bethnal-green. Mr. S. W. Iron, surveyor. Quantities supplied by Mr. Brett.

Lerko	£360	Rivett	£319
Reed	355	F. and F. J. Wood	297
Markhall	320	* Jay	225

* Letter afterwards received from Mr. Jay, stating his tender should have been £325.

LUNATIC ASYLUM, KENT.

For lunatic asylum at Stone, Kent, for the Corporation of the City of London. Mr. Bunning, architect.

	Portland.	Ancester.
Webster	£45,500	£43,400
Holland and Hannen	44,600	43,000
Ryder	44,200	42,800
Higgs	43,445	42,000
Sewell and Son	43,166	40,106
Trollope	42,800	41,920
Brown and Robinson	42,670	40,820
Corder	42,600	40,400
Lucas Brothers	42,300	41,550
Hill and Co.	41,000	39,038
Myers	40,817	40,150
Axford and Co.	40,140	39,660
Ashby and Horner	39,970	39,500
Perry	39,575	37,575
Wilson	39,425	38,925
Piper and Wheeler	38,464	37,784

DWELLING-HOUSE, BEDFORD.

For the erection of dwelling-house and coffee-rooms in Cauldwell-street, Bedford. Mr. Usher, architect.

Reynolds and Son	£484 0 0	Francis and Son	£378 15 0
John Young	452 12 2	Thomas Preston	371 0 0
John Cunvill	422 0 0	Samuel Joy	339 9 6
James Houghton	405 15 0		

CATTLE MARKET, COLCHESTER.

For the erection of the Colchester new cattle market. Mr. J. S. Cooke, C.E. Quantities by Messrs. R. L. Curtis and Son.

Sawyer	£1,953 0	Lee and Baker	£1,406 10
Parker	1,800 0	Dobson	1,357 16
Rayner and Co.	1,521 0	Orrin and Elsdon	1,348 10
Start	1,513 0	Strickson	1,150 0
Hawkins	1,444 0	Hunt (accepted)	1,140 0

WORKHOUSE, LANCASHIRE.

For works required at the workhouse now in course of construction at Blackburn, Lancashire. Quantities supplied by the architect, John Edward Outes, York and Halifax.

Masonry to Entrance-lodge, and to complete Retaining Wall.

Field and Broughton

Carpenter's and Joiner's Work for Lodge, and Fittings in Workhouse.

R. Bell

G. W. Baron

Steam Boilers, Cooking Apparatus, Hot Water Apparatus, and General Ironwork.

Fryer

Brooke

Clark and Co

Gas Tubing.

Cowburn

J. Metcalfe

John Bell

Masonry and Slating, &c.

A. Neill (accepted)

HOUSES, NEW WANDSWORTH.

For a pair of houses to be built at New Wandsworth, for Thomas Cole, Esq. G. H. Page architect.

Piper and Wheeler

Notley

Westcott

Bass

ALMSHOUSES, LONDON.

For thirteen additional almshouses, and other works, at the Licensed Victuallers' Asylum.			
Haine	£3,300	Wills	£2,897
Allred	3,214	James and Ashton	2,892
J. and C. W. Todd	3,197	Ennor	2,872
Adams and sons	3,181	Greenwood	2,800
Blackburn	3,120	Morter	2,743
Hebb	3,090	Searle	2,473
Martin	2,957	Harrap and Son (accepted)	2,100

CHURCH GALLERIES, &c., TUNBRIDGE WELLS.

For two new galleries, pulpit and reading-desk, &c., in Christ Church, Tunbridge Wells, Mr. W. Bond, architect. Quantities by Charles M. Strange.			
Winnifirth	£583	Perigoe	£182
Messrs. Pink	495	E. J. Strange	426
Edwards and Walsling	490		

CHAPEL, BIRMINGHAM.

For new congregational chapel, Lozells, Birmingham. Poulton and Woodman, architects, Reading.			
Jones	£3,550 0	Barusley	£3,378 0
Partridge	3,450 0	Webb and Sons	3,360 0
Hardwick	3,428 0	Mathews	3,238 0
Wilson	3,390 0	Bennett (accepted)	2,967 0

COMPETITIONS OPEN.

INFIRMARY.

LONDON.—The managers of the Central London District School desire to have designs for a detached infirmary for their boys' and girls' schools at Cuckoo Farm, Hanwell. The building must be of a simple and inexpensive character, in harmony with the existing buildings, and comprise accommodation as required by the Poor Law Board for 180 boys and 180 girls, each sex to be separately distributed in six rooms. There must also be a kitchen, surgery, waiting-room, and other necessary offices underneath. Particulars on application to the superintendent at the schools. The plans must be drawn to a uniform scale of 8 feet to an inch, each to be accompanied by a specification of the works and an estimate of their cost. No premium will be given, but the architect whose plan is chosen will be paid by commission for supervision, &c., of erection of the building in the usual way. Each set of plans must be subscribed with a motto, and forwarded with a sealed letter, containing the motto and the author's name, to Samuel Heath, Jun. clerk to the Board, No. 10, Basinghall-street, E.C., on or before April 2.

LAYING OUT.

TRANSMERE.—The directors of the Transmere Freehold Land Society desire plans, before the 25th March, for laying out and allotting the estate belonging to the Society, in Higher Transmere: consisting of about 40 statute acres. Premiums will be given for the best and second-best plans. Each plan to be accompanied with an estimate of the cost of the formation and construction of the roads and sewers, and also of the laying out of the land. Particulars from Mr. John Quinn, Chairman of the Society, 22, Lord-street, Liverpool; or from Mr. H. P. Priest, Secretary, Market-cross-chambers, 19, Market-street, Birkenhead.

CONTRACTS OPEN.

BANKS.

LIVERPOOL.—For the erection of new premises for the Adelphi Banking Company, in South John-street, Liverpool. Quantities may be had, and the plans, &c., seen at the office of C. O. Ellison, architect, 20, Clayton-square, Liverpool. Tenders to the architect not later than twelve o'clock on the 28th inst. marked "Tender for Adelphi Bank."

BUCKS.—For the erection of new bank premises, at Aylesbury, Bucks, for the directors of the London and County Bank. Tenders to be delivered to Frederick Chancellor, Chelmsford, Esq., on or before the 25th inst.

IRELAND.—For erecting a branch bank and manager's residence at Nenagh, co. Tipperary, for the Provincial Bank of Ireland. Plans, &c., at the office of the architect, W. G. Murray, 68, Lower Gardiner-street, Dublin, up to the 31st inst. on which day estimates are to be forwarded addressed to Thomas Hewat, Esq., Provincial Bank of Ireland, 42, Old Broad-street, London, E.C.

TOWN HALL.

TIVERTON.—For the erection of the New Town-hall, &c., for the Borough of Tiverton. Plans, &c., at the town clerk's office, Peter-street, Tiverton. Sealed tenders endorsed "Tiverton New Town Hall" to be delivered at the town clerk's office, on or before the 2nd of April. Bills of quantities will be supplied by the architect, Mr. H. Lloyd, Park-street, Bristol.

BATH.

RYDE.—For a floating bath, 110 feet long by 55 feet wide, with thirty dressing boxes, waiting room, &c., to be constructed of timber, and moored near the pier at Ryde. Plans, &c., at the office of the Company's engineer, Mr. F. Newman, 16, George-street, Ryde, where sealed tenders are to be delivered before noon on the 31st inst.

CHURCHES.

SUFFOLK.—For the works to be done in additions and alterations to Ousden Church, Suffolk. Drawings, &c., with Mr. J. F. Clark, architect, Newmarket. Tenders to the Rev. W. S. McDonald, Rector, Ousden, on or before the 24th March.

CAMBRIDGE.—For the works to be done in restoring the north wall and roof to nave of Kirtling Church, Cambs. Drawings, &c., at the office of Mr. J. F. Clark, architect, Newmarket. Tenders, sealed and endorsed, "Tender for Church Restoration," to be sent to the Rev. W. Chavasse, Kirtling Vicarage, before the 24th inst.

IRELAND.—For the several works to be done in erecting the intended new Roman Catholic Church at Broadford, co. Kildare, for the Rev. Felix Tracey, P.P. Plans, &c., with John S. Butler, Esq., architect, No. 16, Hume-street, Dublin, to the 31st inst.

SUFFOLK.—For taking down the tower of Foxearth Church, near Sudbury, Suffolk, and building a new tower and spire, together with other works. Plans, &c., at the school-room, on the 24th of March, and five following days. Sealed tenders, directed to Rev. John Forster, Foxearth Rectory, on or before the 6th April.

CHAPELS.

BRISTOL.—For the erection of the Clifton Wesleyan Chapel. Drawings, &c., with Fosters and Wood, architects, 6, Park-street, Bristol, till the 28th inst., on or before which the tenders are to be sent to the architects, sealed and endorsed "Tenders for Clifton Wesleyan Chapel."

EXETER.—For the erection of a chapel adjoining the Training College. Plans, &c., at the office of the architect, Mr. Hayward, to whom tenders, sealed and endorsed, "Tender for Training College Chapel," before ten o'clock a.m. March 7.

SCHOOLS.

SURREY.—For the infant school and house proposed to be built at Farncombe, near Godalming, Surrey. Plans, &c., at the Farncombe National Schools. Tenders to be sent to C. H. Howell, architect, 6, Crescent, New Bridge-street, London, before the 24th March.

DWELLING HOUSES.

STAFFORD.—For additions to premises in the Gaol-square, Stafford, (belonging to Mr. Wm. Wynne.) Plans, &c., with Mr. Henry Ward, architect, Bank-passage, Stafford.

STAFFORDSHIRE.—For the erection of six dwelling-houses at Heron Cross, Fenton, for Mr. Barlow. Drawings, &c., at the office of Charles Lynam, architect, Stoke-upon-Trent, until the 26th inst., on which day tenders are to be delivered to the architect, sealed and enclosed.

STAFFS. X.—For the erection of a dwelling-house, with offices, entrance-lodge, &c., at Staplefield Cuckfield. Plans, &c., on application to Mr. F. W. Holloway, surveyor, Hayward's Heath, till the 25th inst. on which day, at noon, the tenders will be opened.

CAMBRIDGE.—For the erection of a dwelling-house or villa, to be built in March, in Cambridgeshire. Plans, &c., at Mr. Edgar Foster's, at March. Tenders to Mr. Foster, on or before the 31st March.

TWICKENHAM.—For building eight small houses at Twickenham. Drawings, &c., at the office of the architect, Henry McCalla, C.E., 25, Westbourne-place, Eaton-square, to whom tenders by 12 noon March 24.

DUMFRIES.—For building a dwelling-house and offices, at Heads, in Lochrutton. Plans, &c., at Heads. Tenders to W. Beattie, Esq., Newton, on or before March 26.

HANTS.—For the erection of a dwelling-house and offices, at Little Arnwood, in the parish of Hordle, Hants. Plans, &c., with Messrs. Haslam and Buckland, surveyors, 23, Friar-street, Reading, Berks; or at the Farm-house. Tenders to be delivered at 23, Friar-street, Reading, on or before March 27.

ERITH.—For the erection of a villa residence at Erith, in Kent, for Mr. Strickland. Plans, &c., on the 26th inst., with Mr. Gates, 3, Eton-grove, Lee, Kent.

POLICE-STATION.

DEVON.—For the erection of police station, &c., at Northtawton, Devon. Plans, &c., with Henry Ford, Clerk of the Peace, Castle of Exeter, and at the office of Robert Fulford, Esq., clerk to the Justices, Northtawton. Sealed tenders endorsed, "Tender for Northtawton Police Station," to be sent to Mr. Ford on or before the 1st April.

BRIDGE.

MONTGOMERYSHIRE.—For the erection of a plate girder bridge, for Broniarth, Meifod, Montgomeryshire, of 100 feet clear waterway, and 18 feet over all. Plans, and specifications can be seen at the office of the county surveyor, Kerry, Montgomeryshire. Broniarth is about 10 miles from the Llanymynech Station, on the Oswestry and Newtown Railway. Tenders by April 7.

RAILWAYS.

INVERNESS AND PERTH JUNCTION.—The directors are prepared to receive tenders for the construction of two additional sections of the line, viz.:—1. The Dalnacardoch contract, extending from Calvine to the march between the counties of Perth and Inverness, measuring 12 miles 1,383 yards or thereby, and comprising about 40 bridges and culverts for roads and streams, the span of the largest bridge being 60 feet. The excavations consist of about 250,000 cubic yards, including some rock. 2. The Aviemore contract, extending from the river Duluin to a point near Kinrara, measuring about twelve miles 1,140 yards. The excavations on this section are almost wholly gravel, and comprise about 300,000 cubic yards, and the bridges are about 14 in number, the largest being a girder bridge over the river Duluin, of 80 feet span. The rails, chairs, sleepers, spikes, fish-plates, and bolts will be supplied by the Railway Company. Drawings, &c., at the offices of Joseph Mitchell, Esq., C.E., Inverness, from whom, or from the assistant engineer on the line, duplicate schedules may be obtained at £2 2s. each. The cost of the detailed measurements will fall to be paid by the successful contractors. The line is staked out a distance of every 100 feet, according to the working sections. The deepest cuttings are also plotted to ascertain the nature of the materials in the excavations. An assistant engineer will be at Blair Hotel, Blair-Athole, on 1st April at 10 o'clock a.m., to accompany contractors over the Dalnacardoch Contract; and at Lynville, Kinrara, on 3rd of April, at twelve o'clock noon, to accompany contractors over the Aviemore Contract, and point out the works and the sites of the bridges. Draft-contracts proposed to be entered into will be seen with the assistant-engineer, or at Mr. Mitchell's office, on and after the 26th. Sealed tenders, addressed to the secretary, and marked "Tenders for Inverness and Perth Junction Railway Works, 'Dalnacardoch' or 'Aviemore Contract,'" as the case may be, must be lodged at his office on or before the 9th April, at twelve noon.

MILITARY WORKS.

WHITEHAVEN.—For the performance of such of the undermentioned descriptions of work as may be required at Whitehaven and Maryport, in the construction of gun platforms, parapet walls, magazine and artillery store, inclosure-fence, &c., (in the batteries for drill and practice about to be formed there); in the partial levelling and draining of the sites for the batteries; and in the formation of roads. Schedules of prices and printed forms of tender, on or after the 12th March, until the 19th, where plans and specifications of the works may at the same time be seen. Each contractor will be required to tender for all of the trades:—masons', paviors', bricklayers', and plasterers' work; carpenters' work, slaters' work, smiths' and ironfounders' work, plumbers' work, painters' and glaziers' work. Each tender is to be properly filled up and signed, and to be transmitted, under cover, to the Director of Contracts, War Office, Pall-mall, London, S.W., so as to be received there on or before the 25th March next, and to be marked on the outside, "Tender for Works at _____, in the Northern Royal Engineer District."

NORTHERN DISTRICT.—For the performance of such of the undermentioned descriptions of work as may be required at Whitehaven and Maryport, in the construction of gun-platforms, parapet walls, magazine and artillery store, inclosure fence, &c., (in the batteries for drill and practice about to be formed there); in the partial levelling and draining of the sites for the batteries; and in the formation of roads. Schedules of prices and printed forms of tender until the 19th of March, at the Royal Engineer Office, Newcastle-on-Tyne, where plans and specifications of the works may at the same time be seen. Each contractor will be required to tender for all of the trades:—Masons', paviors', bricklayers', and plasterers' work; carpenters' work, slaters' work, smiths' and ironfounders' work, plumbers' work, painters' and glaziers' work. Each tender to be properly filled up and signed, and transmitted under cover to the Director of Contracts, War Office, Pall-mall, London, S.W., on or before the 25th March, and marked on the outside, "Tender for Works at _____, in the Northern Royal Engineer District."

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

W. R. (Portsmouth).—Received: thanks.

B. F. B.—K.—Should be attended to.

C. J. R. W.—A SUBSCRIBER.—G. N. R.—T. S. (Brighton).—Not yet completed, but will be very shortly.

G. O.—We cannot enter into such matters.

S. G. A. (Leeds).—Thanks.

A CONSTANT SUBSCRIBER.—B. R.—Statement was not true; much obliged.

B. O. A. E.—Yes, if suitable; let us see drawings.

Y. N. (Liverpool).—Shall hear from us.

A. L. F.—Perhaps; but we cannot promise.

H. (Dublin).—Send further particulars.

C. A. J.—Shall be engraved.

R. K. J. C.—Parcel has not yet been received.

S. O.—Below our mark.

A SUBSCRIBER (Carlisle).—Yes, of our publisher.

R. E. F. B.—We cannot interfere; you have an obvious remedy.

N. O.—All in good time.

Q. (Salisbury).—Answered at length on another page.

M. J. L.—Review has been some time deferred for want of space; perhaps next week.

F. R. (Cork).—Send papers.

N. J. C. E.—Would be wiser to consult an architect.

M. A. C.—Not at present.

R. O. D. I.—Not suitable.

1.—Next week.

E. S. (Maidstone).—Stands over for consideration.

J. C. and H. K.—No harm has been done at present.

O. E. R.—We have no fear, judging from what has appeared.

A. D. G.—Thanks; too late. Account has already appeared.

** All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old Broad-street, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 15 to 21, Old Broad-street.

Advertisements are received up to six o'clock on Thursdays.

ARCHITECTURAL EXHIBITION.

THE CONVERSAZIONE.

THE *Conversazione* inaugurating the twelfth season of the Architectural Exhibition, took place, as many of our readers are aware, on Tuesday evening last, when, notwithstanding very unfavourable weather, and a little mismanagement in selecting an evening long appropriated by the Architectural Museum, the rooms were for several hours crowded with visitors, among whom the large number of ladies, who by their presence greatly contributed to the success of a most successful gathering, was very notable and gratifying.

Among those present—the number of visitors throughout the evening was mentioned as amounting to nearly 800—were the Marquis d'Azeglio, Budroodeen Tyalgee Sahib, Dr. Samuel Kinns, the Rev. R. Burgess, B.D., D. Brandon, Professor Robert Kerr, Messrs. Mayhew, John Billing, James Wylson, W. Burges, T. M. Rickman, Edward Blatchley, J. W. Penfold, G. Godwin, C. F. Hayward, J. W. Papworth, Randall Druce, E. B. Lamb, T. Roger Smith, R. O. Harris, R. P. Spiers, Thomas Blasbill, G. B. New, T. D. Wyatt, Dollman, Edmeston, Truefitt, &c.

In the course of the evening, Mr. Edmeston, in the absence of Mr. Ashpitel from indisposition, said the Committee were glad again to meet the members and friends of the Institution at another Exhibition, and referred with satisfaction to the fact that the receipts during the last year had been sufficient to meet the necessary expenses of the Exhibition, though they were somewhat augmented in consequence of new regulations being made, one of which was that the Committee determined to pay the carriage of all drawings from country exhibitors, amounting to a good deal of money in the course of the year, and also because exhibitors had free tickets given to them. However, the money received had been sufficient to meet the expenditure, and that was all they wanted. With regard to the present Exhibition, he was able to allude with very great pleasure and satisfaction to the large and interesting collection of drawings and sketches by Mr. Pugin, in the West Gallery. The Committee of the society had always from the first persevered and succeeded in keeping the season tickets at the very low price of half-a-crown, their object being not to make money, but to give facilities to the public to visit their annual exhibitions, and thereby conduce, as far as possible, to the elevation of public taste and the spread of art instruction. The Committee having heard that Mr. Pugin was collecting in all quarters, and from all sources, the drawings and sketches of his late father Mr. Welby Pugin (who was so well known in connection with architecture), for the purpose of exhibiting them in a collected form, it occurred to them that it would not be advisable to have two architectural exhibitions simultaneously, but that it was desirable to have the two collections in one exhibition. Mr. Pugin had already incurred some expense in preparing the collection of his father's designs, and the room for exhibition had been taken; negotiations took place, and it was arranged that the two collections should be exhibited together under the same roof; that the subscribers and season ticket holders of the Architectural Exhibition should have free access to the Pugin Collection, and that non-subscribers and those who did not possess season tickets should pay one shilling for admission to the Pugin Collection, as well as a shilling for admission to the collection of the Architectural Exhibition. He thought that all would see the propriety and advantage of possessing themselves of half-crown season tickets instead of having for a single admission to pay a shilling at one door and a shilling at another. The Society had sent no drawings away to make room for the Pugin Collection. This was the twelfth Architectural Exhibition according to the catalogue; but it was, in reality, the tenth since the present Committee was formed; for ten years the same secretaries, Mr. James Fergusson and himself, had acted in the interest of the institution, and it was with much satisfaction, considering they sprung from so small a beginning, the Committee met the members and friends under such auspicious circumstances. They had established the Exhibition, they had got it a home of its own, and they could all look back with satisfaction at the result, as well as with gratitude to the support of the public. But they ought to see many more names in their catalogue among the leading members of the architectural profession. An architect was not like a painter, who might produce, perhaps, only two pictures in a year; but an architect had many drawings going through his office every year, the exhibition of which would tend to the elevation of public taste, and the teaching of young men who might come to the galleries to study. There was room for reform in this respect. The Committee had hoped that there would have been rather more of that feeling or enthusiasm for art, this year, at a time when London was expected to be full of people from all parts of the world. They had hoped that there would have been more of that feeling than had turned out to be the case. They had reason to see, from various causes, that public taste and knowledge had not reached the pitch it ought to reach, and we lately had an example of the skill and taste among a certain body who had the management of a very important

undertaking. Therefore they ought to do all they could to improve the public taste.

The Rev. R. Burgess, Chairman (who stated that he had been unexpectedly called upon to preside), said, exhibitions seemed to be the order of the day, and this one offered peculiar advantages to the public. Whereas a person would have now to pay two shillings for a single admission to the whole of this Exhibition, he could have a season ticket for half-a-crown; and if the Great Exhibition authorities had afforded similar advantages, they would have sold a great many more season tickets than they had done. These exhibitions tended very much to the promotion of art and science in this country, and had really become schools of instruction for those who were not professionally engaged, but who still wished to correct their tastes and improve their information on such subjects. Looked at from that point of view, they were exceedingly important. This Exhibition was a peculiar one; it was a combination of architects, who contributed architectural drawings. They were a class of themselves, and they had much need to study architecture in this great metropolis when they compared its architecture with that of other capitals. It seemed that, with Parliamentary supplies and votes of money, it was impossible for us to produce what was produced by other countries. He wished more liberality was exhibited in voting money for public buildings, so that they might be an honour to the country. The more they studied civil architecture the more they would insist on the improvement of our metropolis. He was sure they would all feel and sympathise with the fact that one of the patrons of that Institution, as he was the patron of every other that promoted art—his late Royal Highness the Prince Consort—they had lost since they had met together at the last Exhibition. They had lost that great promoter of art and of everything that tended to elevate the tastes of the people of this country. It was a great loss, and it would be difficult to replace that loss. It was, he thought, a want of consideration and almost of respect to the Institution, that so many of our architects whose names were before the world should withhold contributions to the Exhibition.

Professor Kerr said, as to the observations which fell from Mr. Edmeston and the Chairman as to the non-exhibition of drawings by some eminent architects, he hoped no one thought they were speaking in disparagement of the drawings exhibited. All they wanted was to see brought together there from year to year a good average collection of the works of the year, so that they might keep well before the public; they did not wish to impose on the public by any false display, or to give the public an erroneous notion by an inferior display.

Passing through the rooms the display visible upon the walls would occasion some anxiety, if we were not fully aware of the circumstance which has caused it. We were, in fact, agreeably disappointed to find the Exhibition even so good as it is, in the face of the infinitely greater temptation afforded in the galleries of the International building. The Committee of the Conduit-street Exhibition were not so fortunate as the Royal Academy in commanding sufficient interest to obtain a disqualification at Brompton for all drawings not previously exhibited, thus preserving the works of the current year for their own galleries. The consequence is, that although architects have been months busy preparing drawings of their best works, our foreign visitors will seek in vain for them at the Exhibition which is opened expressly and exclusively for them. We cannot complain of this result; it would have been foolish to expect otherwise; but we had every hope that the members of the Committee would at least have individually exerted themselves to supply the deficiency which they could not but anticipate. Instead of which these gentlemen are foremost amongst the absentees. Half of them have not been able to afford even a solitary contribution; three out of the nine who do contribute send but one drawing or photograph, and one of the remaining six shows us what at first sight appears but smoked glass, but what the catalogue kindly informs us are photographic views of Halifax Chapel. Mr. Edmeston, the Honorary Secretary, shows his accustomed zeal on behalf of the Society, which is so much indebted to him for his exertions. The designs are no great attraction to the walls, but they at least answer a good purpose this year in hiding vacant space. Mr. Truefitt, for once, is seen on so small a scale as to be with difficulty recognised. The only member of the Committee who comes out in his old form is Mr. Lamb; he contributes no less than nine frames, containing altogether between thirty and forty subjects. They are not all new; they belong to the past, present, and future. One, a sketch for a "Public Library," is, if we mistake not, that which was submitted in competition for the Liverpool Library some seven or eight years ago. They all bear more or less the stamp of Mr. Lamb's original and fertile mind; whether it be a simple cottage, warehouses for the Consignment and Store Company, or a large public building, he contrives to impose some characteristic feature into his work.

The architectural Royal Academicians, as usual, withhold their august patronage from the Architectural Exhibition, but as they so frequently—we may almost say constantly—show the same modesty in Trafalgar-square, we have not much to complain of. As it has, however, all along been more than likely that the best men of former years would this season be absent, we thought it not improbable that the honoured members of the profession would have seized the opportunity of displaying that ability for which they have been so justly rewarded. The International Exhibition would not confer a higher dignity than that which they possess. They would certainly have created interest in Conduit-street. Where, again, are the living English professors of the Queen's gold medal for architecture? Not certainly where they ought to be, supporting an architectural institution which needs the support of the best men in the profession in

order to make it worthy of it. We do not say that the lights which have so long been kept under a bushel have gone out, but we must be pardoned for saying that their brightness, so closely hidden, is of very little use. We walk through London; we look through the weekly list of tenders in our journal, and we find that architects have not been idle; we know they would be grieved if the Architectural Exhibition were to expire of atrophy, and yet they cannot seemingly give it that support which is essential to its existence, and which it deserves to possess. An architect who erects a large or a public building can afford to make a drawing of it for exhibition; an architect who submits a drawing in competition incurs no extra charge in lending it for a season; architects, again, who have made the profession a stepping-stone to a great reputation have, we believe, duties intimately associated with their honours—duties which should induce them to set before their professional brethren examples of the excellence which has secured to them so dignified and envied a position, thus to guide us in the path which we should tread.

The result, then, of the modesty of our great men, of the thoughtlessness or indifference of those of whom we more regret the temporary loss, and of the greater attraction at the International Exhibition, is that the walls at Conduit-street are very liberally sprinkled with drawings, which, but that they hide what would otherwise have had to be left blank, ought not to have been hung at all; and that, even with this unwelcome aid, the Great Gallery alone is filled. There is no use in suppressing this unpleasant fact, the very knowledge of it may be a stimulant to exertion next year.

Fortunately, on the present occasion, a grand collection of Pugin's sketches have been systematically arranged in the West Gallery, the walls of which, as well as two large screens, are completely covered with them. We shall speak of them more fully presently, but may now simply remark, that 900 unpublished drawings of the great pioneer of the Gothic revival, are sufficient to atone for even the absence of any work of that great architect, who, without mental exertion, has blown by steam a couple of huge bubbles at South Kensington, and enshrined himself conspicuously therein, like a fly in amber, leading all the world to wonder how he got there.

We can, on the present occasion, only notice the more prominent works hung upon the walls, and we must defer a detailed account even of them until we have an opportunity of bestowing sufficient attention to them.

We cannot help remarking upon the largely increased number of photographs which are this season exhibited, and that they are, moreover, in many cases taken from drawings instead of from the existing building. We may gather thence, perhaps, that the original drawings are gone to South Kensington. If every architect had given even such second consideration as this implies to the Architectural Exhibition, we should have had little ground for complaint at the paucity of the works.

Several of the old contributors are still seen to advantage, and they deserve the greater amount of thanks, because their works would have shone prominently forth from amidst any collections of architectural drawings. Messrs. Green and De Ville send no less than a dozen frames, mostly competition drawings. The Italian designs have generally been honoured with a premium of some kind, and they undoubtedly deserve it; but we cannot understand why these architects, who are so proficient in one style, will go out of their way to prepare such a coarse piece of Gothic work as the Unitarian chapel at Hampstead (29). Their several designs for town-halls, and for the Palais de Justice, at Brussels, are better than anything we have ever before seen from them. The interior of the concert room at the Hartley Institute is a lovely piece of decoration.

Mr. C. Foster Hayward is likewise this year a most valuable contributor, and shows a marked advance upon anything which he has previously exhibited. His shops at Haltham, Essex (9), are exquisitely designed, and his little Swiss chalet erected at Lexden-park, Colchester, is worthy of the three views given of it.

Mr. R. Phene Spiers, who, we believe, has only on one previous occasion exhibited here, sends the drawings for a villa, which procured him a premium from the Institute. They show a vast amount of study, and the careful training of the school in which he has evidently been educated. Every form is chaste and elegant; the ornament is tenderly applied, and blends happily with the moulded stone, giving it richness without coarseness, and varying the treatment without in the slightest degree disturbing the unity of the composition. The interior is treated in the same artistic manner. The same gentleman exhibits three sketches in one frame; that of "The Château of Chenonceaux" in the centre does not please us much, but the two spires of Chartres Cathedral are brilliantly represented.

We have several examples of the fine foreign Gothic work of Mr. E. W. Godwin—that shown in the Town-hall at Northampton, of which we, some two months ago, gave a view, is especially good. That for the Swansea Public Hall and Market is injured by the piers, which seem to compress the upper windows. Another architect, Mr. R. W. Edis, has with equal success taken up with this foreign Gothic. His design for the New Town Hall at Hull is a favourable specimen of his manner of dealing with it. The same architect has designed a chimney-piece for the Poet Laureate, and another for Mr. T. Woolner (64). Mr. J. P. Jones is as prolific as usual, and Mr. C. H. Smith has an amusing design for an octagon vestibule (86). Mr. Pope gives us a photograph of Archbishop Holgate's Hospital, Yorkshire, of which we had the original etching here two years ago.

The architect of the successful design for "The Godolphin School, Hammersmith," has at length exhibited it. We have already seen the unsuccessful designs. They had external architectural attractions of a high order. This, we presume, has obtained its success by some excellent

internal decoration, which the common-place brick walls unfortunately hide. The merit of such qualities must have been very great to carry the elevation through even a competition committee. The fact of its doing so is evidence of the excellence, which no one has an opportunity of pirating, because it is only implied, and is not unfolded to us. We must congratulate the architect on his good taste in sacrificing in execution the ugly, although original, tower, which, in the drawing, surmounts the building.

One of the best drawings in the room is the interior view of Mr. W. Wilkinson's "Design for the Agricultural Hall at Islington," and the largest is a cartoon by Mr. Gibbs. They both have attractions, but of a very different kind. The very elaborate sketches which Mr. Vaughan has heretofore produced are this year gleaned from Germany, Italy, and Sicily; but we infinitely prefer the less laboured and more spirited sketches of Mr. Benzeley (81).

The collection of building materials shows evidence of the same antagonistic influence as does that of the drawings. Messrs. Hart and Son do not exhibit at all, and Messrs. Minton are also absent. The post of honour in the Cross Gallery is occupied by a large model of Sedley's Patent Iron Bridge, which combines the uses and advantages of the Tubular, Girder, and Suspension principles. Messrs. Cox and Son have furnished their recess in their customary manner with excellent examples of wood carving, but we must defer to another opportunity descriptions of it, as well as of other works, which we are this week unable even to mention.

THE "DICTIONARY OF ARCHITECTURE."

MR. ARTHUR CATES, the hon. secretary to the Architectural Publication Society, writes, with reference to the notice of the Society's Dictionary in our last Number:—

"This Society is much indebted to you for the manner in which you last week placed before the profession its objects and position, and with reference to one portion of your remarks I would beg leave to state that the best manner of increasing the number of subscribers, and, at the same time, of reducing to new comers the weight of the subscriptions accrued for past years, has long been an object of solicitude to the Committee; and the course adopted—to permit each new subscriber, who may so desire, to spread the payment of the back years' subscriptions over any reasonable period he may wish—has received general approval, and is working very satisfactorily; a considerable number of new subscribers having been recently enrolled under these conditions.

"The success of a Society of this nature must, in a great degree, depend on the active co-operation of its members in making its existence and works well known within their own circles; and, from the results which have recently followed the exertions of one or two of our members, I am confident that very much advantage would result if all could be induced to follow in such a course—not limiting their suggestions to their professional friends, but bringing "the Dictionary" under the notice of that very numerous and influential class, in whose libraries such a work would be of the greatest value; and I shall always be happy to consider any suggestion on the subject, and to communicate to all inquirers every information respecting the Society.

"One leading object of the Committee has been so to conduct the publications as to secure the maintenance of the market value of the work, and to guard against any such depreciation in price as now too often occurs to the prejudice of original subscribers. In this I have every reason to believe that they have entirely succeeded; and as they now stand pledged not to sell any portion of the work at less than the subscription price, and as the stock of past years' works is limited, it appears to me very desirable that the profession should clearly understand that there is not the least probability that by waiting they may be able to purchase the work at any reduction on the original price. And, further, that all who desire to possess it should not longer delay placing their names on the list of members in order that they may secure a copy."

DARTMOUTH IMPROVEMENT COMPETITION.

WE learn that the Dartmouth Town Council have, in relation to the plans for the improvement of their town, awarded the first premium to Mr. John Bell, engineer of the Dartmouth and Torbay Railway; and the second to Messrs. Rickes and Isaac, architects, of Northgate-street, Bath.

PAINSWICK, GLOUCESTERSHIRE, CEMETERY COMPETITION.

WE understand that, designs having been submitted in competition for the proposed new cemetery, those by Messrs. Elmslie, Francy, and Haddon, architects, of Malvern, London, and Hereford, were selected as being the most suitable.

The chapels, with porch and robing-room to each, are in the Decorated style, and are to be built of local stone; the roofs are to be covered with Staffordshire tiles. Between the chapels is a tower and spire.

The lodge, entrance gates, boundary walls, and palisading are to be of appropriate character.

The grounds are about 4 acres in extent, 2½ acres of which are allotted to the consecrated portion, and 1½ to the unconsecrated portion.

Tenders for the whole of the works have been received, and that submitted by Mr. Henry Birchall, of Birmingham, is accepted. The works are to be commenced immediately.

EXHIBITION OF THE SOCIETY OF BRITISH ARTISTS.

THE present exhibition differs little from some of the more recent of its 33 annual predecessors, still existing in our memory. The landscapes are as numerous, and few of them better than formerly. The figure subjects are, generally speaking, less ambitious than we have seen on some late occasions, and the cattle painters have not thrown into shade the merits of their more early labours. The largest picture in the exhibition is by Mr. Salter, and represents "King Charles II. Presenting to his Queen, Catherine of Braganza, a List of the Ladies he proposes to Wait on Her Majesty." Such a picture is entirely above the powers of this artist, and we confess to being deficient in both patience and forbearance to criticise such pretensions with decorum, and shall, therefore, remain silent. "The Relief of Lucknow by Generals Havelock and Outram," by Mr. G. Foggo, is a picture of some interest, which we have seen somewhere before; but we think now, as we thought then, that art is too ostentatiously displayed in the construction of the central group, and deprives the incidents of that probability and naturalness which would give them reality and interest. We do not object to see the rules of art employed, but how much of them may be made apparent to the casual observer must depend entirely on the nature of the subject. The defence of Lucknow was, beyond all doubt, heroic in the extreme, but the meeting after that noble defence was naturally a manifestation of strong but ordinary human feeling; any show of affectation in any of the actors at that moment would have been most offensive, and art-affectation in representing the event is equally out of place. It is such displays of rules that enables pre-Raffaellites to employ the word "composition" in derision of the sound principles of art.

The gems of the present exhibition are few. In the figure department, "The Return of the Lost Sailor" will become the picture of the year in these rooms. It is remarkable for the extremely energetic attitude of the wife, which is both skilfully and legitimately accounted for by a widow's cap thrown on the ground. The only objection to it is, that it implies a little more presence of mind on her part than is consistent with her astonishment and frantic joy. The artist would probably have acted more wisely had he placed the cap nearer to her, as if it had fallen from her head, when she, instead of rushing into her husband's arms, threw herself down on her knees, clasped her hands, looking up to heaven, her eyes filled with tears, returning thanks for his being alive more than for pleasure at his return. At present this piece of millinery forms too obtrusive a feature by being placed so prominently in the foreground. The spectator should have had to find it more than having it thus forced upon his attention. That kind of hidden information is always advisable, because the discoverer becomes so far identified with the artist, and takes, consequently, more interest in the picture. The husband's manner is, very properly, mild, soothing, and affectionate, because he is not influenced so powerfully as his wife, for, as she believed him dead, his arrival is greatly more surprising to her than she being where he expected to find her is to him. We are not quite certain that the presence of the child increases the pathos of the scene. If this subject were not so forcibly represented as it is, the elaborate style of execution would spoil it. All the accessories are so highly finished as to attract attention on their own account, and we regret to see that an artist capable of depicting human passion so powerfully, should, perhaps in obedience to the fashion of the day, render himself liable to the charge of "namby-pambyism." His sailor is far from being the travel-worn and picturesque figure described by the lines quoted in the catalogue. The painter of this otherwise excellent subject is Mr. T. Roberts, whom we are, unfortunately, obliged to censure as well as praise, but the latter relates to his success in the highest branch of art, and the former refers to the secondary consideration in a picture.

The landscape, which, according to our present impression, deserves especial notice, is a view at "Stanlake Bridge," by Mr. W. W. Gosling. It has the rare merit of illustrating the quotation that follows its title in the catalogue, for it is a peaceful vale seen beneath the summer's sun, whose beams are playing fitfully between the stems and the branches of the trees overhanging the gurgling brook in the middle distance, and the *débris* in the foreground shows that the stream becomes a roaring flood in the winter, carrying all before it. The whole of the middle and extreme distance is treated with complete unity of effect. There is a pleasing light and leafy character in the management of the trees. The water is agreeably placid and transparent. The lights, without appearing artificial, are so arranged as to carry the eye easily through the subject. There is no doubt that the spottiness on the foreground tends greatly to the pleasing sense of repose pervading the rest of the picture, but we think it, by excess, shows the painter to have been over anxious on the point, and we would suggest monotone is better suited to large masses, and should be neutral in tint; but the numerous small pieces of stone in the foreground are too positive, both in colour and form, to do all the good the artist intended when he introduced them. However, we think, taking this picture as a whole, it has the advantage over its neighbour, by Mr. Vicat Cole, of a similar subject, being entitled "The Brook." This latter is certainly a very pleasing distance of well lit landscape seen between the opening of the trees, but his foreground is still more censurable, being more hard, bald, and uninteresting than that in Mr. Gosling's picture. We regret that Mr. Vicat Cole should have quitted his open corn-land scenery, in which he was so successful.

On the contrary, we have to congratulate Mr. G. Syer on the change we find in his treatment of a coast scene "near Conway." Not because it displays more knowledge of art or greater ability as regards execution than formerly, but because it is altogether a more generally pleasing effect

of light and atmosphere than this artist usually exhibits, and is, therefore, more likely to obtain for his talents that admiration from the public which they have always deserved. We have selected this picture as one of the gems of the exhibition, not only for what we have just stated, but because, when compared with the rest, it presents, besides its pleasing tone and charming atmosphere, a sense of unity and completeness more than usually satisfactory.

The "Way-side Gossip—Scene in Surrey," by Mr. F. W. Hulme, is another picture we select, on account of the painter having entirely succeeded in accomplishing his intention, and think equally so in communicating it to others. The subject is a simple one, but a brilliant effect of mid-day sun was the charm which, no doubt, induced the painting of the scene, and the result is perfect success. There is a kind of hard metallic effect produced by the strongly enforced objects in the foreground of this picture, which is rather repulsive at first sight, and we think more than enough so, to produce a contrast to the delicacy of the distance; but it belongs to the realistic school of art, and there seems to be few artists who appear to have the moral courage to neglect it in some part of a picture.

We must place also among the gems of the exhibition a picture by Mr. J. T. Peel, entitled "The Picture," because elaborate making out of parts, strong colouring, and obtrusive lights are so much in fashion, that it is quite delightful to meet with a painting modestly subdued in all those respects, and in which the faces are not painted "flesh colour" to the very roots of the air, like masks, and with the features as immovable. The faces of the two young girls in question have all the ease of nature, and their features have apparently all the flexibility required. They are, therefore, playfully smiling without fixed grimace—a happy effect obtained by the absence of all unnecessary drawing in hard lines of the separate forms. There is great breadth of middle tint relieved by lights, both soft and partial; the colouring is so subdued as not to catch the eye, and the entire attention of the spectator is consequently allowed to rest on the most interesting part of the subject—namely, the smiling countenances of the two young girls looking at a print which evidently affords them much amusement.

From among Mr. A. Woolmer's numerous contributions, we select "The Maiden's Dream" as a very poetical effect of moonlight playing on the elegant form of a sleeping female. How the quotation from Shakspeare applies—"Oh, then, I see Queen Mab hath been with you"—we failed to discover. The inserting of quotations in catalogues seems to be very generally adopted by artists for the sake of giving space and importance to their own names. However, the picture may be admired for its well-managed tone and complete effect. We think "The Fortune Teller," by Mr. Cobbett, in the same room, will also be admired for the indolent attitude of the girl telling her own fortune, and the doubtful expression in her face. "Beat my Neighbour" is more appropriately high in finish than, as far as we recollect, any other picture in the exhibition. The subject is unimportant and the picture is small, and, therefore, as it must be looked at closely, admits of a smooth style of manipulation, the prevalence of subdued and cool monotone, relieved by variety of tint, without disturbing the breadth of the general effect, is equally appropriate and skilfully managed. Better than all, while the finish enhances the value of the picture by the taste and care with which it is executed, it does not in the slightest degree interfere with the expression in the faces or the fun of the subject. The boy has evidently the winning card, and laughs at the puzzled look of his elder companion as to which of his last two cards he will play, and the subject becomes still more laughable from the fact that his thoughts and anxiety are clearly useless.

Without pretending that "Cinderella flying from the Ball, changing as she runs," is a successful effort, and deserving especial notice on that account, we think there is too much merit in attempting a subject so difficult, and industry displayed in its execution, to be passed over in silence. She has stayed until the last moment allowed by the fairy, and her rich jewels are falling off, and her fine costume is changing to her ordinary dress, as she quits the ball-room. As it is, the picture looks, as far as the principal figure is concerned, unfinished. To make the subject intelligible as far as possible, the fairy, her coach, and sprites, or something illustrative, supposed to be invisible to all but Cinderella herself, should be introduced. This is the only means the artist has, under such circumstances, of showing what is passing in the mind and influencing the action of an important person in his composition. If an authority be required for such a mode of treatment, we will quote a highly classical one—Poussin—who, when he represented Coriolanus in the Volscian camp, with his family and a whole train of Roman matrons kneeling in supplication, in order to show the ideas passing in the mind of the hero, introduced a female warrior, as the tutelary genius of Rome, and her attendant Fortune, to terrify him into compliance, warning him to yield to the destiny of his country. Unless the painter has the genius to invent such an illustration of his subject, and the moral courage to provoke adverse criticism—a bold innovation in these eminently practical and coldly matter-of-fact days—such a subject as "Cinderella flying from the Ball," changing as she quits it, should not be painted.

A young aspirant for fame, in the person of Miss Edwards, sends a pretty little picture of "Rosalind and Cecilia"—"As You Like it." The moment chosen we suppose to be when Rosalind exclaims "Oh! how weary my spirits are," or to that effect. There are pleasing character and very delicate painting in this small work, but we think it scarcely possible to make it clear for whom the figures are intended without "Touchstone," as the time is past when an artist could have got over the difficulty by writing on one of the trees "this is the forest of Arden."

"Gaming and its Results," by Mr. H. J. Pidding, is another picture deserving of notice, for the labour and talent which have been bestowed upon it, although the subject is far from new and the result not eminently successful. We observe that the artist has decorated the *salon* of gamblers with casts from the well-known antique figures; and as he has indicated an acquaintance with classic art, and shows that his early practice has been in that excellent school, we may entertain a hope that the evident want of happy facility in drawing figures in modern dress arises merely from limited experience in that respect, and, therefore, relying upon the admirable foundation, he has, we presume, laid in his early studies, that nothing but perseverance is required to render him a valuable contributor to our annual exhibitions. We fear, however, on reflection, that this artist's name has unfortunately been before the public too many years to justify the hope we have just expressed. The principal incidents are not new, as well as the general subject, but the artist has bestowed much thought on the necessary variety of character in the persons assembled.

"The Dog in the Manger," by Mr. G. Cole, shows how much in almost every respect an artist is deficient when he attempts an animal of the size of real life. The cow's head in this picture wants the exact reality of texture, anatomy, and drawing in their highest degree of truth and refinement to make such a picture desirable. The dog is, however, spirited and clever. Mr. Pyne exhibits his usual number of landscapes or sea pieces, which possess, with one exception, his well-known conventional tone of atmosphere, delicacy of treatment, and elegant execution. But the one to which we decidedly object is that we believe entitled "Naples from the Bay," in which he has represented the foam on the waves like so many strips of white tape, with what intention it is impossible to guess, unless he was pandering to the taste of some possible art-union prize-holder infected with pre-Raphaelite inclination.

The comic subjects are few. The most laughable is, probably, "The Duet, Music hath Charms," a laughing boy scraping a violin till he breaks the strings, making a dog howl most piteously. It is very well painted by Mr. G. A. Holmes. The features of the boy's face, however, are made out in the hard manner to which we have already objected. That face, looked at abstractedly, could never change from what it is. There is some humour in "The Five Senses," illustrated by boys, girls, and children, in the most homely manner. The same artist, Mr. Bromly, has the interior of a boys' school very amusingly treated. It is entitled "Oughts and Crosses." The principal players at that game appear likely to verify the old saying of lovers, that "Two are company, but three are none," for the school-master, cane in hand, is cautiously approaching to take his part in the proceedings, on which the players are represented as being very intently occupied. This is a well coloured picture, the heads have character, and are also equally well varied in position. There is "A Welsh School," by Mr. Cobbett, which, without being intended for a comic scene, is well painted, and the effect of clear daylight extremely well rendered. A "Stitch in Time," by Mr. J. Hayler, is one of those pictures of which the origin is difficult to guess. In this instance, one is puzzled to decide whether the artist was desirous of showing how he could paint a naked boy, and make the old and excellent saying an excuse for doing so; but if the saying itself suggested the picture, the illustration is most absurd, because there is something incongruous in a boy quite naked sitting on a table while his clothes are being mended, for surely the neglect of a stitch in time can hardly apply to his under garment, even if we admit that it may have had a serious effect on his jacket and trousers. However, there is a great deal of slovenly character about the father, and certainly the evident difficulty he has to thread the needle may be some excuse for having delayed the operation so long. The style of painting is remarkably broad and effective. The sculpture is better than usual.

The visitor to this exhibition must not fancy because there is no "lion" that there is no picture worth looking at, for, on the contrary, the more the collection is examined the more there will be found worthy of notice.

UTILISATION OF THE SEWAGE OF TOWNS.

THE Select Committee of the House of Commons appointed to inquire into the best means of utilising the sewage of cities and towns of England, with a view to the reduction of local taxation and the benefit of agriculture, have met for the first time.

The Earl of Essex was examined, and he stated that he had 200 acres of land at Watford that he irrigated by sewage. He had applied it experimentally to wheat, roots, and common grass, but more especially to rye grass, which gave him an increase in value of £2 per acre clear profit. He irrigated two acres of wheat with from 60,000 to 80,000 gallons of sewage. Eighty thousand tons a year cost 1d. to 1½d. a ton, but it might in many cases be effected for ½d. He had found it most efficacious in destroying weedy substances, and it had increased the production of corn to a most incredible degree. He had extensively applied the sewage to land, and in five minutes afterwards there was not the slightest smell therefrom. He had employed the same men to apply the sewage for years, and never knew them to suffer in health in the slightest degree. He was Chairman of the Royal Commission of 1857, appointed to inquire into the disposal of the sewage of towns, and that commission drew up a report in which regret was expressed that so little progress had been made in the disposal of the sewage of towns. Sixty thousand tons of sewage per year would be sufficient for fifty acres of land, and that could be obtained from a town consisting of 4,000 inhabitants. Sewage was a permanent benefit to the land. He used the sewage on land within 100 yards from his own house and found no annoyance from it, and, indeed, in five minutes after the irrigation there was no smell from it.

After another witness had been examined, the Committee adjourned.

PIER WORKS ON THE DANUBE.

IN giving a description of the Delta of the Danube, and of the works recently executed at the Sulina mouth, before the Institution of Civil Engineers, the author, Mr. C. A. HARTLEY, said that the European Commission of the Danube having resolved to improve the bar channel of the Sulina, by guiding piers of a temporary character, in order to give the speediest relief to the navigation in the cheapest manner, he, as Chief Engineer, received instructions to provide works which, for the expenditure of a sum limited to £80,000, should have the effect of giving an increased depth of at least 2 feet, over a period of from six to eight years.

The designs for the provisional works were then matured; and as it was found, in practice, that the cost of strong timber cribs, to be loaded with stone, and sunk at intervals of 20 feet along the line of the works, would exceed the original estimate, choice was finally made of a structure composed of timber piling and *pierre perdue*, surmounted by a timber platform 14 feet wide, strengthened occasionally by solidly constructed cribs of the same width. The works were commenced on the 21st April, 1858, a temporary staging, fixed on piles, being always run out from 200 to 300 feet in advance of the permanent piling. This staging supported nine crab engines, by which three rows of three piles, each 13 inches square, and 7 feet apart, were frequently driven, in one day, to a depth of 16 feet into the hard fine sand of which the bottom was composed. The piles were then immediately secured by double longitudinal walings and double cross-ties, the whole being surmounted by two thick trampedies and planking, at 4 feet above the level of the sea. From this permanent platform the close piling on the side next to the sea was driven. The daily rate of progress, during fine weather, was 20 lineal feet; and as soon as this length of sheet piles was completed, stones were thrown down to protect the footing in the sand, which was liable to be washed away by the action of the sea. This scouring action of the sea was so serious, when the skirt of the bar was reached, that it threatened at one time to demand, for the completion of the works, double the quantity of stone originally estimated. Several plans were tried to reduce its pernicious effects. That eventually adopted, and which was perfectly successful, was to advance the open pile work with all possible expedition, and then to pave the proposed seat of the pier with stones, delivered from barges. This pavement withstood the attacks of the sea, and offered no great obstruction to the penetration of the sheet piles, which, without being shod, had frequently been driven 10 feet into the ground, after having been forced through 8 feet of rubble stone. The section of the finished stonework was a solid mass of closely packed third-class rubble, resting on a broad base, and narrowing upwards at slopes varying from 2 to 1, near the pier heads, to 1 to 1 and 1½ to 1 near the shore, until slightly below the level of the water, it became a mere ridge against the close piling. The time occupied in the actual construction of the piers was thirty-one months, exclusive of three winter months each year, during which the Danube was frozen over, and all work was suspended, but inclusive of two hundred and seven days when it was impossible to work on account of stormy weather. The length of the north pier was 4,631 feet, that of the south pier was 3,000 feet, and the depth of water in which they were built varied from 6 to 20 feet. In their construction 200,000 tons of stone and 12,500 piles had been employed, and the cost had not exceeded ten guineas per lineal foot. The stone was brought from a distance of 60 miles, and its price, delivered in place, varied from 4s. to 5s. per ton; the oak used for the longitudinal and transverse timbers and for the planking and fender piles cost 2s. 3d. per cubic foot, while the fir timber piles were delivered ready for driving for 4d. per cubic foot. The workmen, of whom there were generally 300, were composed of men belonging to more than ten different nations. Labourers were paid 2s. 6d., and carpenters 4s. 6d. per day.

THE ALBERT MEMORIAL.

THE Committee held a meeting last Friday, and it appears that as yet no stone has appeared to them more suitable for the purpose in all respects than that which lies in a granite quarry of the Duke of Argyll, in the Island of Mull, to which reference has been made, though they have arrived at no decision on the subject. They were informed that since their last meeting workmen have been busily engaged in uncovering more of the stone at Mull than had been previously revealed; that they have now dug round one of the extremities, and that though the other one is still uncovered, this block of granite is now cleared to the length of 115 feet, or eight or ten feet longer than it was supposed to be. The committee were further informed that all practical men on the spot concurred in the belief that the stone is sound and perfect, but that no absolute opinion could be pronounced until it shall have been wholly detached and carefully sounded all round and throughout its entire length, which will be a work of time. A rough specimen broken from the block itself has been received in London, and is about to be polished.

A letter has been received from the proprietor of a granite quarry at Balmoral, stating that it contains a single stone about 100 feet in length and nearly 50 feet broad. The letter was accompanied by a polished specimen, but the colour is not so satisfactory as that of the Mull granite, while the cost of conveying it to the coast would be greater than that of removing the block at Mull, which is distant about 500 yards from the sea.

THE MAUSOLEUM FOR PRINCE ALBERT.—On Saturday week her Majesty the Queen laid the first stone of a mausoleum in Frogmore gardens, in which are to be deposited the remains of the Prince Consort, and, ultimately, her own. Upon the stone is the following inscription:—"The foundation-stone of this building, erected by Queen Victoria in pious remembrance of her great and good husband, was laid by her the 15th day of March, A.D. 1862. Blessed are they that sleep in the Lord." The building is to be erected under the superintendence of A. J. Humbert, Esq., architect. The reclining statue of the Prince will be executed by Baron Marochetti.

GIGANTIC ENGINEERING PROJECT.—Under the above head, the *Mechanics' Magazine* remarks at some length on a scheme of M. Alphonse Oudry, *Ingénieur du Corps Impérial des Ponts et Chaussées à Paris*, who has proposed to unite Calabria with the island of Sicily, by means of a suspension bridge over the Strait of Messina. The distance across the Strait is about two miles and eight-tenths, requiring for each line of the suspension-chains one thousand six hundred feet in length, while the intervals proposed between each of the points of suspension are three thousand two hundred and eighty-one feet each; the width of road-bed is to be sixty-six feet.

THE INTERNATIONAL EXHIBITION BUILDING.

THE building for the International Exhibition, nominally finished a month ago, still occupies a vast army of busy workmen. The Commissioners, we are told, even despair of having it actually finished in due time. One of the main causes for the delay was the time wasted in determining the nature of the internal decoration, for, until that was decided, no step could be taken for removing the scaffolding which stood in the nave and filled the transepts. The flooring had all to be prepared, as well as laid, after such clearance had been effected. No blame can be attached to the contractors for this delay. They did all that men could do to prevent it. They spared neither expense nor energy in the performance of their work; but the experiments in colour were deemed essential, and, indeed, were so, to the amateurs who had sufficient influence to exhibit their individual weakness, and only at the last moment was a man in any way competent entrusted with the thankless task. We say thankless advisedly, because Mr. Crace really has not had a fair opportunity to show his powers. The structure he had to work upon was unworthy of the material he had to work with. He was expected to hide with ornament the want of art. It is no disparagement to Mr. Crace to say that he has failed. Here and there we have glimpses of right principles, but they are not consistently carried out. The framework of the nave and transept ribs seems all awry by its alternate colours. They come far more forward when looked at from a distance than their more soberly tinted corresponding pillars. The chequers on the soffits of these ribs give a false appearance to them, and, moreover, a weak one. Looked at from below, the dark portions seem apertures, which is irreconcilable with the decoration of their face. Sufficient attention has not been paid throughout the building to a clear and unmistakable definition of the forms of the timbers. The face and soffits are often coloured the same tint to the obliteration of thearris-line. Red and blue are used indiscriminately to relieve ornament. We look obliquely through the large courts; the slight and subdued tints gradually die into a pleasant pearly neutral, but the blotches of red colour in the ugly capitals of the square columns thrust themselves obtrusively forward as though demanding "What think ye of us?" We think them simply offensive; they mar the retiring character which this portion of the building possesses, and which, but for them, would be the least conspicuous, and, therefore, for an Exhibition building, the most satisfactory part of Mr. Crace's work. We must not, however, do injustice to the picture gallery, which, taken by itself, is most successfully painted. Presuming that Captain Fowke's principal rafters are to be hidden by a horizontal light, we may even say that the decorator has modified a considerable amount of its repulsiveness. There is no particular novelty in the colouring, and no great quantity of ornament, but what is done is done with taste and judgment. The walls are of a warm green tint, the soffits of the moulded strings and cornices are of a dead red colour, and the same tint—a kind of maroon—defines the panels in the cove. A broad band of the same colour, with festoons and medallions at the sides, frames the doorways. We can conceive no better arrangement, considering the time for preparation and execution, than that here carried out.

The backing of the tasteless open iron gallery-railing is seemingly to consist of dull red cloth. The last time we saw this railing a portion of it was experimentally painted a bright blue. We were glad to see that abortion strangled at its birth; but the sap green tint, with the little patches of gilding and ebeccolate ground which replaced it, really deserved no better fate.

We notice with regret that the French, to acquire more wall space, are enclosing the whole of their large court at the south-west corner of the building; if this plan be repeated in the other courts, the only general and extended views of the interior will be those of the nave and transepts, and no visitor will be able to embrace at a glance a title of the building's extent. We would, however, direct attention to the happy way in which our neighbours from across channel are planning their court. By using freely diagonal passages a much larger surface of show-space is most ingeniously obtained.

The domes, which were to have "dwarfed Diana's marvel to a cell," are still very troublesome. Uneasy is the head that wears a crown, and still more so must the building be which has two, and two such over-balancing incumbrances as those at South Kensington. The scaffolding is not yet out of them, and yet after the brisk gales which lately swept over London, they looked as though they had been peppered with grape shot. How repairs to them will hereafter, when the scaffolding is removed, be effected, is a marvel to us. The domes are certainly useless, and it is equally certain that they are not ornamental. Would it not be well at once to put an inner roof to them at their springings, with all necessary rain-water down pipes, and thus, spite of the broken glass, prevent them becoming a continuous nuisance?

CEMENT DRAINS FOR LAND.—A very simple but ingenious mole-plough, for cutting drains for agricultural purposes, and covering over the tunnel thus formed with cement, has been made by Mr. Watson, of Ohio, U.S. The great obstacle to draining land on an extensive scale is the expense of digging with the spade by hand labour, and the cost of the tile tubing used for the watercourses. In this ingenious invention the ploughshare, connected to the beam by a thin sword-standard, protrudes below the carriage to the required depth of the drain in the subsoil, and in its forward passage scoops out the drain-hole. A spiral conical trowel follows, spreading all round the hole thus made the hydraulic cement, which runs down from a hopper above between the ploughshare and the trowel, and thus, completely plastering it with cement, forms a continuous tubing for the drainage water.—*London Review.*

A COMPARISON OF SOME OF THE DETAILS OF BUILDING ADOPTED IN ENGLAND, AND IN OTHER COUNTRIES.*

THE liberality with which the leading men in France communicate their works to the technical and scientific journals for publication, and the numerous Government establishments for teaching arts and sciences where those publications are accessible to any one who likes to apply, tend to popularise science, and to keep the inquiring members of the higher trades "well up" to the progress of the age. In these matters we do not manage quite so well as they do in France; and we do not possess such extensively organised means of public instruction of a high order; but perhaps our working classes are, on that very account, the better fitted to take care of themselves, and learn that greatest and best habit of self-reliance, so strikingly deficient among foreign workmen. Be this as it may, the modern carpentry works of France are as neatly finished and as well put together as anything we see here; their scantlings are, perhaps, even more logically chosen, and indeed the objection that they display rather an affectation of mathematical correctness may often be urged against them. I would quote, as an illustration of some of the best pieces of recently executed French carpentry, the highly decorated spire of la Sainte Chapelle, the marvellously solid scaffolding of the Louvre; the suspended service bridge of the Pont Neuf; the centres of the Mont Louis bridge over the Loire, and the ingenious method of easing those centres; and the lock gates of the old Bassin de la Floride, at Javre. As to the Belgian and the Dutch carpenters, they are still about half a century behind our French neighbours, the Americans, and ourselves. The Germans and the Swiss, so far as I have been able to form an opinion, are rapidly treading on our heels; whilst the Spaniards, Portuguese, and Italians, are even behind the Dutchmen in the practice of the noble art of carpentry.

It is worthy of remark that in Holland, in some parts of Germany, in the centre of France, in Spain, in Northern Italy, and, in fact, wherever gypsum is not easily obtained, there is a tendency to dispense with the use of ceilings, and to leave the joists apparent, whether planed or unplanned. In all those districts, too, the joists are made out of square baulks, and the house carpenters do not seem to be aware of the law which renders the depth of a girder so important a function in its resistance. They use floor-boards also of great width and considerable thickness; but as they do not employ dogs, or other mechanical means for bringing the boards together, the shrinkage is necessarily very great, and the floors are disagreeably permeable to sound; in Spain and in Italy I will add permeable also to scents and visitors from the cattle stowed, not stalled, beneath. Carpentry, in fact, like all other arts, gains by the friction of the intellect of the nation applying it with the intellect of other nations; and it advances just in proportion as the habit of foreign intercourse may prevail. Local habits sometimes, however, have an independent influence upon the peculiar character of these arts, and it is curious to observe how the traditions of ship carpentry affect the habits of the Dutch house builders, and how the necessity for providing against the treacherous nature of the soil they build upon compels them to adopt scantlings different from those we could safely employ. Their joists as often have to resist the inward as the outward movements of the external walls, and must, therefore, present great lateral stiffness in order to allow of their acting as struts. If thus we inquire deeply into the things we may at first be disposed to sneer at amongst foreigners, so we shall generally find that there is some practical foundation for everything like national habits.

The reference I made just now to the influence which the art of shipbuilding has had upon the style of carpentry of Holland, brings me to a curious part of our subject, upon which, perhaps, we have something to learn. In Holland the shipbuilders' traditions have been so strong, that, throughout the length and breadth of the land, the staircases are built precisely upon the model of the companion ladders of ships. The pitch of the stairs is remarkably steep, the treads are let into strong wall-strings at each end, and the spaces between the treads are left open; there are no risers in fact. Generally speaking, in the houses of the middle and of the poorer classes, these ladder staircases are made between closed partitions, with ropes against the sides instead of hand-rails; open well-holes are unknown, and there is a sad deficiency of light and of ventilation. These defects prevail, in a minor degree, it is true, in Belgium and in French Flanders; but in France proper the art of staircase building, whether in wood or in stone, is carried on in a manner immeasurably superior to the one we adopt. Such an abomination as a "dog's leg" staircase would never be admitted in that country; and in no case would a French builder dream of executing winders terminating in a point. We here seem to think that if we present a sufficient width of tread in the middle of our flyers we have done all that we need do, and we leave the narrow ends of the treads to take care of themselves; a French staircase handrail, however, at erecting a staircase in which it should be possible to hold by the hand-rail in passing the turns, and so to arrange the edges of the treads, that the body of the person ascending or descending should, if I may use the phrase, retain the same swing from the top to the bottom of the stairs. Wherever they can do so the French builders arrange their staircases so as to have a long landing in a perfectly straight line, the inner edge of which forms the diameter of an elliptical curve, and the width of the treads is set out equally on the line drawn through the centre of their length, care being taken to make the minor axis in such proportion to the major axis, that in no part of the outer string should the width of the tread be insufficient to afford foothold. In a continuous flight, returning upon itself at right angles, with winders at the turn (where we, in fact, should put up a dog's-leg staircase), the French builder either sets out his steps upon a half ellipse divided upon the minor axis, or he applies such a half ellipse to the end of two parallel lines passing through the middle of the treads in such wise as to avoid the treads ending in a point. Of course, if he can secure an open well-hole, his winders are more convenient than when that advantage does not exist; but even in the latter case the French do not hesitate to sacrifice a little in the length of the treads in order to avoid their ending in a point. Uniformity and regularity of motion are with them the great desiderata of staircases; with us cheapness of construction is more sought after. I can speak practically, however, on this subject, for I worked for some years in an office in Paris, where I had four times a day to go up and down 90 steps, and for a similar period in an office in London, where I had to ascend 72 steps. The French steps were all winders! the English ones straight flyers, yet the fatigue in mounting the former was less than that felt upon the latter. It may be added that the French staircases are also generally easier than our own, on account of the better proportions observed between the rise and the tread of the steps; and as I do not find that any rule upon this subject is received amongst our workmen, I beg to mention the one which is adopted in France, namely, that inasmuch as on the average human beings move horizontally two feet in a stride, and as the labour of rising vertically is twice that of moving horizontally, the width of the tread added to twice the height of the rise should be equal to two feet.

I do not dwell upon the modes of setting out handrails, of working outer strings or soffits, because these details follow upon the principles adopted in setting out the stairs on the centre line of the treads. It would, however, well repay you to study the best examples of these works in Paris; and if you desired to study the modes of dealing with more monumental staircases, you would do well to refer to those of Central Italy. The manner in which the French have applied hollow pots to the formation of fireproof staircases is well described in Eck's work, and it would well repay your attention.

French joiners do not seem to me to be equal in skill to our own countrymen following that craft, and the joiners of the other countries I have visited are still more inferior. It would, indeed, be difficult for men working with the frightful looking saws, planes, and chisels the Frenchmen use to do good work; and the only wonder is, that they do what they actually do. We might, however, take good lessons from them in the preparation of opening sashes (French casements) and of sun blinds; their counter work, dadoing, sliding doors, and wall linings, are often framed with great skill; and their floors and parqueture are very beautiful. But they have a vile way of pegging the tenon joints of their framing, instead of gluing and wedging it up, which is very much to be avoided; and they are not particularly attentive to insuring the mathematical trueness of the faces of their panelling. In the cheaper style of house building the French joiners are fond of executing the doors in clamped and framed finish work, the frame and clamps being of oak, and the filling-in boards of poplar or of deal, and upon the faces large panels are formed by simply nailing

* Read before the Society of Builders' Foremen and Clerks of Works, Lyon's-inn Hall, on Wednesday, 12th March, by Mr. GEORGE R. BURNELL, civil engineer and architect. Continued from page 196.

on mouldings. These doors almost of necessity warp or split in consequence of the unequal contractions of the different woods; and they are by no means to be compared to our own four-panel doors, either for strength or for lightness. In the execution of door fittings our neighbours tolerate a degree of carelessness of execution which our architects would not allow; and, indeed, I suspect that there is something in the excitable impatient nature of the French workman which renders him incapable of the continued, sustained attention requisite to insure the perfection of this most difficult trade of joinery. It may be that the introduction of a better description of tools may enable our neighbours to turn out their work with greater perfection than they do now; but certainly I do not at present think that we have much to learn from the continental joiners; nay, rather on the contrary, that they could learn much from us in ordinary works at least. Of course I do not, in so saying, include wood carving in any of its branches; for in this walk of art we have very much to learn from both the French and the Belgians. The latter nation, indeed, retains much of the facility for handling wood which characterised its artists of the seventeenth and of the eighteenth centuries; the Germans and Swiss are also very skilful in this kind of work, but they are bad joiners. As for the Italians and Spaniards, the word has no meaning when applied to their workers of wood—their work hardly ever joins at all.

It is worthy of remark that, in most countries, the state of the blacksmith's and of the ironmonger's art may be taken as the criterion of its progress in material civilisation, because those details of building are usually considered beneath the architect's attention; and they are abandoned entirely to routine, unless in very exceptional cases. The extraordinary demand for iron roofs for railway sheds, and the great revolution produced in the whole of the arts of construction by the introduction of the railway system, have, however, caused engineers and architects to turn their attention of late years with more earnestness to the methods of employing both cast and wrought iron than was formerly the case; and in England, France, Belgium, and Germany, we, therefore, find that the methods of employing those materials have been greatly improved. At the present day I am far from being convinced that we retain any superiority over our neighbours in this respect; and were it not for such works as the Britannia and the Saltash bridges, the railway station roofs of Liverpool and Birmingham, I should be disposed to seek models for imitation in the smith's art in such works as the Cologne, Strasbourg, Theiss, &c., bridges, or in the roofs of the French and the Strasburg railway stations of Paris. In the use of cast iron, the French engineers have also been very successful of late, and the bridge of Tarn-con amont de Solferino, in Paris, may be referred to as proving their perfect mastery of the theory and practice of the application of that material to large structures. In more ornamental works, Englishmen are, I am ashamed to say, immeasurably behind the French, and even the Belgians, in the use of cast iron; and I would simply mention as proofs of this lamentable fact the lamp-posts of London and of Paris, or the miserable objects dignified by themselves as "fountains" or "statues," whether of cast iron or of bronze. No doubt these things enter within the domain of Art-education; but it is a source of humiliation to any rightly thinking Englishman to be compelled to acknowledge the utter incapacity of his countrymen now to contend in them with the nations we have been so long accustomed to lead. In machine-making, too, the French and Belgians are applying with wonderful skill and energy the lessons they learnt originally from us, whilst the patient untiring labour of the Germans is very rapidly placing them in the foremost ranks of the workers of metal, whether for useful or for ornamental purposes. If my voice could be heard by the misguided trades-unionsists of Sheffield, I would indeed raise it now and then, to warn them that the steel knife, tool, and file makers of Germany are now gaining on them so fast in the continental markets, that the prosperity of their (the Sheffield maker's) trade is already seriously threatened; and that a persistence in the attempt to regulate trade operations according to their own ideas will only result in establishing the fortunes of their continental rivals. We have no longer a monopoly of skill in engineering, in founding, in smith's work, or in engine making, and it is high time that our manufacturing classes should awaken to the fact that they have intelligent, steady, and earnest rivals in the field, men endowed with facilities for practical operations nearly, if not quite, equal to their own; and with æsthetic faculties infinitely superior. Nothing but a strong effort to improve our taste, and to perfect our technical processes can, indeed, enable us to retain our wonted place amongst the metal workers of the world—perhaps even our rank of metal producers may be threatened by the progress going on around us, for even Spain and Italy are entering upon the wide field of metallurgical enterprise, and the Rhenish provinces of Prussia are being boldly opened up for this purpose, hitherto, I know by personal experience, successfully.

The ironmongery of the continent is still, however, very far indeed from being equal in its construction, or in its style of finish, to that which we obtain in England, as a general rule. The locks made abroad are detestable, the bolts clumsy, the hinges flimsy; the escamoteur fastenings of French casements are, it is true, often elegant, and the gasfittings are often models of taste; but, on the whole, it does not seem that the English manufacturers have much to learn in these matters. I am not quite sure that in nail making we are quite right in the system we adopt; and, from some experiments I have witnessed, I am disposed to believe that the French nails (made out of drawn wire, pointed and headed by hand), hold more firmly than our nails (punched from flat plates) do. For ordinary purposes, however, our nails are quite good enough; and the manner of making them certainly reduces their price to a very low one—to a price which is, in fact, lower than that of the French nails, size for size. Screws are naturally made in the same manner all the world over; and as to spades, pickaxes, wrenches, screw-jacks, chains, crabs, pulleys, and the countless other articles of an ironmonger's shop, there is little for us to learn in other lands, excepting, perhaps, in America, where labour-saving tools are articles of such vital importance.

As to the plumber's, zinc worker's, coppersmith's, brazier's, slater's, tiler's, &c., arts, no especial remark need be made, for they are conducted almost everywhere in the same manner, with more or less of skill, and more or less of care. In the painter's art, the principal remark to be made on the foreign methods of carrying it into effect are, that there the oxide of zinc is more commonly, and more successfully used, instead of the oxide of lead, than has been the case here. I cannot quit this part of the subject, however, without calling your serious attention to the remarkable skill of the Dutch painters in producing what they call the porcelain painting, which consists of many coats of flat even tints, carefully rubbed down, and varnished. I have nowhere seen any painting to be compared, indeed, to the best descriptions of Dutch work.

Now, I beg distinctly to say that in these remarks I have been careful only to allude to the more obvious distinctions between the methods of building adopted in England and in the countries I have mentioned by name, and that, as I have practised my present professions of architect and civil engineer in all of those countries, I have been in the position to know the merits and demerits of the various schools. I have not hesitated, with your kind favour, to say boldly where I have thought that we are deficient, and as to the old saying "that to know our faults is half their cure," I believe that I am rendering the English workmen a real service by telling them of some of the defects of their present habits, and of the description of competition to which they may possibly be exposed. There is nothing so dangerous for a nation as to fancy that it is at the top of civilisation, and then draping itself in its mantle of self-sufficiency, going as it were to sleep in the enjoyment of its supposed advantages. We Englishmen, at the present day, are about to do this, and because we really are more skilful artisans and better organisers of the division of labour than other nations are, we are apt to forget that they are striving might and main to wrest the palm from us. In former times the Dutch occupied amongst industrial nations very much the same position, comparatively, that we do now, and they went to sleep in the imaginary security of their position. They waked now to find themselves not in the van of progress, but in its rear, and have earned for themselves the unenviable title of the "Chinese of Europe," notwithstanding their industry, their skill, their learning, and their intellectual capacity. May the lesson not be lost upon us; and may we, casting aside all false pride, receive gladly the lessons to be derived from whatsoever source, pondering over them thoughtfully and with the earnest desire for improvement. It is only on this condition that we can remain "a wise and understanding people," for candour to perceive and wisdom to adopt the good example set by others, are the first elements of the practical philosophy required in dealing with the affairs of daily life, even if they be not the first elements of national greatness.

In conclusion, I would observe that the French and Belgian Governments are about to send, at the national expense, picked men from the various trades of their countries to study the works about to be exposed in the Great Exhibition. If I might be allowed to

make some suggestions to you on this matter, they would be, firstly, to urge you to take some steps to welcome and to assist your fellow-workers during their visit; and, secondly, to organise some means of studying the Exhibition methodically for your own benefit. Could I serve you in either the one case or the other, I hope that you would command me, without scruple or hesitation. It is but little I can do to testify to your body the sense of good feeling and of obligation I feel towards you, for the way in which I have been always supported by those who have worked with, or, I may now say without boasting, under me; but that little shall be at all times given frankly, and, from the bottom of my heart I say it, gladly. As to our neighbours, I can say the same, I was always well and kindly treated by them, even in times when popular passions against foreigners were most rife; and you may trust me when I assure you that any hospitality you may show to our anticipated guests "will have its reward."

The organisation of benefit societies and of trade protection societies on the Continent, together with their "craft rules," must form the subject of a special communication, to which I hope to be able hereafter to invite your attention.

ON PICTORIAL MOSAIC AS AN ARCHITECTURAL EMBELLISHMENT.*

A FEW words will suffice to dismiss the sixth species of mosaic, which I have called "*Italian portable*." By this term, I would convey that the basis of the variety is not so much making portable mosaics, as, from the great weight of the materials, they can never be made easily portable, but rather making reproductions in mosaic of pictures in oil or other media, which may be really and readily transferable from place to place. This species is, in fact, little else than a revival of the fine *opus vermiculatum* of the ancients. It would be incorrect to say that the Greeks did not ever manufacture miniature mosaic pictures, because two noted specimens exist to my knowledge—one at Florence, and the other, of extraordinary perfection and curiosity, in the Kensington Museum; but it may be safely averred, from the great rarity of such relics, that the practice was altogether exceptional. This, indeed, is not to be wondered at, since, with the quick drying cement ordinarily used for mosaic work, it must have been extremely difficult to execute these almost microscopic pictures, which bring within the compass of a few square inches subjects usually worked out in as many square feet.

This leads us to the conclusion that the ancients for their finest mosaic pictures must have used some retarding agent, such as honey or beer would prove, to keep their cement plastic longer than it would remain if mixed with water only. When, however, Giovanni Battista Callandra applied, early in the seventeenth century, a mastic in lieu of an ordinary hydrate of lime, to unite the tessere, it became comparatively easy to copy the most elaborate pictures in mosaic. By this artist was executed the beautiful reproduction of Guido's St. Michael, which, with Raffaele's "Transfiguration and Domenichino's St. Jerome, is about the best of all the celebrated mosaic pictures in St. Peter's.

In the marble incrustation which forms our seventh species, and which is best known as *Florentine mosaic*, the tints and shades are given by the natural colours of the jasper, agates and other precious materials of which the work is composed. The hardest minerals only are used, and as each small piece must be cut and ground to a pattern, and each thin veneer backed by a thicker one of slate or some such material in order to give it strength, so much labour and time are involved in its production that its high price has necessarily limited its use. Zoli, the principal writer on the art of *pietra dura* mosaic, tells us that he knows of "no existing example in Italy of marble pictorial mosaic executed during the first periods of the revival of the arts, excepting the specimen to be seen in the central nave of Siena Cathedral, said to be the work of Duccio di Buoninsegna, who lived in the fourteenth century." There can be no doubt, however, that the art was founded on the "*opus sectile*" of the ancients, and that it descended by regular tradition from classical times. I need scarcely recall to your recollection the extraordinary advance made in the pavement of the same cathedral upon the work of Buoninsegna, by that great master of the sixteenth century, Beccafumi. The art was greatly patronised by the Medici. The celebrated "*Fabbrica Ducale*" of Florence was founded by Ferdinand I., Grand Duke of Tuscany, in 1588, and its reputation during the seventeenth century was kept up by the exertions of those artists to whom Florence owes the finest specimens of mosaic which enrich her palaces and galleries, and whose names are for the most part given to us by Baldinucci.

Before taking leave of this subject, we must not omit to notice the exquisite specimens produced in India of pictorial mosaics, representing the finest Arabesque and conventional ornament in *pietra dura*. That the Indians were early in possession of all the technical ability necessary for such work is proved by the antiquity of some of their gem-cuttings, inlaying, polishing, and carvings in hard stones; but it is probable that their sovereigns owed much to Italy for assistance in that beautiful marquetry which ornaments the great monuments at Delhi and Agra, for in 1688 a passport was obtained from the King of Spain, by the Grand Duke of Tuscany, for four workmen, skilled in mosaic working in precious stones, whom he was about to despatch to the Great Mogul.

This art is retained at the present day both in India and to even greater perfection in Italy, for the specimens contributed to the recent Exhibition at Florence, some of which may be even now on their way to this country, were quite equal to anything produced in the palmy days of the Medici.

It would take too long now to describe the practical processes adopted in this and other modes of mosaic working, and, having already given them in a work I published in 1848 on the subject, and in a report to the Board of Trade made in 1855, it is better to refer you to those sources of information than to further detain you from entering upon what is, indeed, the most practically interesting section of our inquiry this evening. Before commencing, however, upon the second part of our subject, the theoretical basis upon which we should, as architects, aid in the revival of pictorial mosaic, it behoves us to take stock of the present state of the material conditions likely to affect any such revival. In Italy, as I have already said, the art has lingered on, maintained in its monumental form by the necessities of repairing old works, rather than by the desire to create new; and in its portable form by the incessant demands of foreigners to carry off with them, as pilgrims' marks in the nineteenth century, slabs of what is generally known as "*Roman mosaic*." In France, under the first Republic, an effort was made to introduce this manufacture into Paris, and a "*fabbrica*" was opened by the authorities, under the charge of a Signor Belloni, in the old College of Navarre, in the Rue de la Montagne, Ste. Gervaise. At the "*Exposition*" of the year X, some products were contributed from this establishment, but as it altogether disappears from the catalogue of subsequent ex-

positions, there is every reason to believe that the experiment was abandoned. With this exception I am aware of no attempt made by France hitherto to revive pictorial mosaic. I have not heard of any other efforts, making or made, in any of the other countries of Europe, excepting our own.

Before noting what we are doing in this direction, it may be well to record the progress making in Italy. There are now three establishments in "Italia" (supposing it to be "unita"), at all of which I believe the *smalti*, or coloured vitreous pastes requisite for mosaic working are made, and from which they may be procured. These are each attached to great structures, the mosaics of which require occasional repairs, viz., St. Peter's, at Rome, St. Mark's, at Venice, and the Benedictine establishment at Monreale, near Palermo. Of the products of these establishments, the Roman and Venetian are the best, and the Sicilian the cheapest. Through the kindness of Mr. Penrose, of whose exertions in connection with the revival of mosaic I shall presently have occasion to speak, I am enabled to bring to your notice the following particulars of the relative cost of the products of these establishments. At the Roman Fabrica he was furnished with an estimate for the execution of mosaic (of course, in very fine work) for "*opere di decorazione*," at the following rates, reduced to English feet and English money:—For figure subjects or landscapes, at from £23 to £38 per foot superficial; for flowers or animals, at from £23 to £31 per foot; for Grecian, Roman, or cinque cento ornaments, at from £19 to £27 per foot; and for Byzantine ornaments, at from £3 17s. to £11 10s. I cannot help thinking that there must have been some misunderstanding with respect to the above estimate, for such prices might justify the very minute work requisite for copying highly-finished pictures, but are altogether unreasonably high for ordinary decorative work. I am led to this conclusion because Ciampini tells us that when Clement VIII., in the beginning of the seventeenth century, commenced the embellishment with mosaic of the dome of St. Peter's, the price offered for the labour was about £1 10s. per English foot. This was so profitable to the workmen as to attract the labourers from all parts of Italy "*fama tam innodici pretii*." The consequence was that very speedily the price fell to about 7s. 3d. per English foot. This would be, of course, exclusive of the value of the material employed, which latter would be worth then probably about 15s. an English foot. Allowing for a great increase of value since Clement VIII.'s time, it is hard to suppose that similar work could be worth more than about £3 sterling per foot at the present time. This would agree pretty well with what the director of the mosaic establishment at St. Mark's, Signor Moro, told Mr. Penrose, viz., that the cost of finished work, similar to the ordinary Byzantine, would be about £3 2s. per English foot. With respect to the cost of the Venetian material, I have myself obtained from the Count Cornaro the prices at which Signor Salviati, the practical manufacturer who makes for St. Mark's, will supply the *smalti*, viz., for gold and silver, 12s. per pound, cut into tesserae; 6s. for the same quantity uncut. For varied colours, 3s. per pound uncut. Count Cornaro states that it will take about 33 English pounds' weight of gold and silver, or 50 lbs. of coloured smalto to do a French metre superficial of mosaic; the French square metre being rather more than an English superficial yard. Mr. Penrose remarks that at Palermo the price is much the same as at Murano for the smalto, but that the price for cutting it into small pieces is very much lower in the former than the latter place; thus the prices for cutting only, at Murano, are, for coloured smalti, 6s. 8d., and for gold no less than 15s. 6d. per English foot; while at Palermo, for 4s. 7d. per foot, the manufacturers will cut up into tesserae golden and coloured smalti indiscriminately. Mr. Penrose's object in making these inquiries was to ascertain how far it was practicable to enlist foreign assistance in carrying out some of his proposed decorations in St. Paul's in mosaic, of a more pictorial nature than we had at the date of his last visit to Italy succeeded in producing.

The notes he made become now, happily, of less importance than they then were, owing to the fact that with the exception of the gold ground mosaic which our manufacturers have not yet, so far as I am at present informed, been very successful with, all the other foreign pastes may be with advantage replaced by home produce, and the work done by English workmen. The actual purchases made by Mr. Penrose for the purpose of experimenting upon, were as follows:—1,200 cakes of gilt smalto, sufficient, when cut up and wrought, to cover about 80 feet, English, £63; 332 lbs. avoirdupois of coloured smalto, sufficient to do about 128 feet, £35.

In the recent Italian Exhibition the Florentine and Venetian mosaic workers alone were well represented. Salviati, the manufacturer, and Vincenzo Redi, the mosaicist, both of Venice, combined in contributing a fine figure of St. Nicholas, taken from Sta. Sofia, at Constantinople; and an equally good one of our Saviour, copied from an original in St. Mark's. Both of these left nothing to be desired in the way of material or workmanship. Antonio Gazetta, also of Venice, exhibited a very good head. I saw nothing, however, at Florence in these works, which, with the exception, perhaps, of the good quality of the gold ground smalto, we could not, I believe, now rival in this country. It remains for us to see by what steps this newly acquired faculty has been obtained.

The revival of mosaic in this country as an architectural adjunct may be considered to have begun in 1839-40. About which time Mr. Blashfield endeavoured to produce decorative pavements by means of inlaid asphalt, coloured cement, and Venetian pisé works, assisted, by the clever inventions of Mr. Singer, of Vauxhall, by his ingenious assistant, Mr. Pether, and also by Mr. Prosser's mode of producing a tile of great density and closeness of texture, by subjecting powdered China clay to strong mechanical pressure in iron moulds, and in this way obviating the shrinking caused by evaporation, which is unavoidable when the clay is used in a moist state. Mr. Prosser's invention was first applied to the manufacture of buttons, in which for some time a large trade was carried on. Recently the Messrs. Maw have invented a process by which they obtain tesserae with the close texture and consequent hard surface, only to be attained by aqueous shrinkage, and hitherto only approached by subjecting the materials to extraordinary pressure.

Mr. Minton, I believe, at the suggestion of Mr. Blashfield, turned his attention to the application of Mr. Prosser's patent to the production of tesserae suitable for the formation of pavements similar to those of the ancients. Many beautiful geometrical combinations for this purpose were suggested by Mr. Owen Jones, and the result of Mr. Minton's spirited efforts was the speedy introduction to the market of excellent tesserae in all colours.

In 1844, when I went abroad to study my profession, Mr. Blashfield gave me a commission to obtain for him anything which I considered likely to render these tesserae (the manufacture of which Mr. Minton had then just entered on), of more general utility. In Italy and Sicily I found much material, of which I

believed little notice had at that time been taken; and this induced me to make a series of drawings, which I afterwards published in the "*Geometrical Mosaics of the Middle Ages*." These drawings were shown to Mr. Minton by Mr. Blashfield, and on my return to England in 1847 Mr. Minton applied to me to assist him in his views with respect to encaustic tiles, and their combination with tessellated work in general. For some time I rendered him what aid I could, and but for other and more pressing professional engagements I should probably have continued to do so. On Mr. Minton's retirement from active business, Messrs. Maw and Co., determining to add the execution of mosaic to their encaustic tile manufacture, sought my co-operation, which has been given at such intervals as have suited our mutual convenience up to the present time. Feeling their strength quite equal to the production of pictorial as well as geometrical mosaic, Messrs. Maw requested me, on the announcement of the intended Exhibition of 1862, to design a pavement of that character for them. Some of the working drawings for that commission I exhibit this evening, and do not doubt that on seeing the work done from them in the Exhibition, you will admit that Messrs. Maw and Co. have fully proved their capability to rival any antique mosaic yet exhumed in this country. To have attempted successfully such an experiment, involving the production of an indefinite number of tesserae of about one hundred different tints—many never previously got up in England—and the application of skilled labour as it had never before, I believe, been employed in this country since the last Roman quitted it, is, I do not hesitate to say, highly honourable to them as manufacturers; and it is a source of gratification to me to have been associated with them in this the first practical endeavour to revive pictorial mosaic amongst us. That we shall soon have many rivals is not to be doubted, since already, through the energetic and most laudable prompting of Mr. Cole, a scheme has been set on foot to which no one amongst us can, I think, fail to give hearty sympathy and support. Some prospectuses, one or two of which I have laid upon the table, give the detail of a scheme which, if carried out successfully, as I have every reason to think and believe it may, will give a rare impetus to the development of pictorial mosaic. Those details I do not dwell on, for the double reason that time will not now permit of my doing so, and that they will, I believe, form the subject of a paper hereafter at the Society of Arts. I may, however, point to two most hopeful features of progress certainly made, viz., 1st. That already the practical co-operation of many of the most celebrated artists in this country has been secured; and 2nd, both Messrs. Minton and Messrs. Simpson (Messrs. Maw and Co.'s London agents) have proved, that if artists will only make good designs, they possess all the requisite power to realise their designs successfully. To prove this, I need only point to the specimen produced by Messrs. Simpson, which has been kindly lent me by Mr. Cole for exhibition this evening.

Such being the actual conditions of the manufacture at the present moment, I think it will be admitted that it is really incumbent on the studious architect to endeavour to grasp the theory of the right application of pictorial mosaic; and it is in the endeavour to either aid him by my advice, or to aid myself by eliciting a rectification of my views, that I put before you as the second and concluding part of this paper a few convictions on the subject, with respect to which I see my way at present pretty clearly.

The combined action of the moisture and severe frost of our climate is such as must always, I fear, render but little durable any extensive application of mosaic in small tesserae as external decorations; to a great extent, therefore, architects will have to look upon it as an internal embellishment. It is, of course, a coloured incrustation applicable to any structural surfaces which it may be desirable to enrich, and its appropriate design must be strictly determined by very nearly the same laws which should govern the distribution of polychromatic decoration, executed through any other medium upon similar surfaces. The rationale of these laws has been by no one better illustrated than by Sir Charles Eastlake, in his invaluable reports to the Fine Arts Commission; and it is better that I should refer you to what he has so well written in those documents than attempt to give you now any paraphrase of my own. The chief exceptional conditions are, firstly, its expense, which entails simplicity; secondly, the extremely vivid way in which it reflects light, and exhibits local colour partially, demanding judgment to adapt the design to the mode of lighting; and, thirdly, its limitations, under ordinary circumstances, as a means of artistic expression, which lead to the prudent avoidance of many of those pictorial elements, such as perspective, foreshortening, lively action, or complicated chiaroscuro, which are proper and agreeable sources of effect in mural paintings, executed with more tractable vehicles. That which the designer will probably at first feel to be his greatest difficulty, the arrangement of the cement joints which attach the tesserae to one another, will, when once he has mastered the principles upon which they should be disposed, prove a ready and most essential means of heightening his effects. The jointing is, to a mosaic designer, exactly what the lines and reticulations of an engraving or etching are to an engraver; and the rules of taste which apply to the one apply equally to the other. For instance, as the engraver's lines by convexity or concavity express the undulations of drapery, and the modelling of surfaces advancing to or retreating from the spectator's eye, so precisely should the directions of the jointing of a piece of pictorial mosaic. Again, as the regular ruling or cross hatching of an engraved half tint is made to give value to the broken lights and shades of the leading figures, to which, by their vivid contrasts, attention has to be attracted, so precisely should the uniformity of the jointing with even-sized tesserae diminish the brilliancy of a mosaic background, breaking up the light which would otherwise be so strongly reflected from, say a white or golden background, as to quite kill the effect of the figures or ornaments to be relieved upon it. Another point which should be carefully attended to in arranging the jointing is to allow a row of tesserae of the same colour as the ground to always follow every leading contour profiled upon the background. The use of this rule, which was invariably followed by all good mosaicists, is to prevent the directions of the generally horizontal and vertical jointing lines of the background from cutting awkwardly against the profiles, which the eye should be allowed to follow without being led off into other channels, or distracted by the occurrence of irregularly shaped tesserae next to leading forms. This reduplication, as it were, of mosaic outline, has almost the effect of the lead line in stained glass, and is not much less essential to good effect. It is highly gratifying to observe the degree of judgment with which the mosaicist has emphasized the designer's intention, by a judicious treatment of the jointing in Messrs. Simpson's specimen here now exhibited. It is always to be remembered that at the distance from the eye at which mosaics are usually likely to be placed, mechanical defects disappear, but that artistic mistakes betray themselves, despite the most perfect mechanical

execution. Hence it is far better to spend time, thought, and money, in getting really first rate cartoons, than in endeavouring to bring the tesserae to fine joints, or microscopic minuteness. In mounting to the summit of the great dome of St. Peter's, glimpses are caught from time to time of the nature of the mosaic work, and the observer who, from below, may have fancied the whole to have been wrought with great exactness, will find that the work is of the coarsest description, with joints in which often a good sized pencil might be laid. From its judicious design, however, the effect of the whole is eminently satisfactory when viewed from the floor of the cathedral.

It may be well to remember also that although mosaic is, as it were, painting, it is something more in its relation to the structure it decorates; it has become "bone of its bone," and in virtue of its intimate and permanent union is especially bound to live in peace and harmony. As a good wife should make conspicuous the virtues of the husband she adorns, should hide his faults and screen his defects, so should a well-devised system of mosaic give, by predominant vertical lines, height to a structure in which height is wanting, and, by predominant horizontal lines, length where length is needed. Brilliance may be wrought out of darkness by allowing gold ground and luminous colours to prevail, whilst the eye, in another building, "faint with excess of light," may be refreshed by a preponderance of cool and quiet tones. Stringcourses and borders, archivolts and impost bands and friezes, should be treated as permanent frames to permanent pictures, essential, by their rectangularity or other simple geometrical character, to afford the eye a ready means of testing all adjoining and more complex forms by contrast. Need I say that where the skeleton of the picture's composition is tossed about in lively action, a stronger boundary of more vivid and contrasted hues must enclose it as a corrective, than when the motive of the picture is of a quieter and simpler structure. That is the reason why the great Venetian pictures demand such massive framing, while the more serene compositions of the early Florentine and Siennese schools look best when separated one from another by little else than narrow bands of flat and softly tinted ornament. In the same way in mosaic, the rigid saints of the early Byzantine school, with their evenly balanced limbs and perpendicular draperies, need little else than vertical palm trees or inscriptions, or even upright staves placed between them, to keep them architectonic; while the later corresponding figures of the Italian school, with their swaying lines, require often actual insertion into niches to keep them even reasonably quiet.

Such are a few of the most important theoretical points which have occurred to me; but, had time permitted, I would willingly have entered this evening upon—what I have, indeed, partly prepared—an analytical sketch of the different artistic conventions, which form graduated stages between the crudest mode of, as it were, symbolising nature, and the most highly perfected form of imitative art. While an intimate acquaintance with the specific conditions of each of these stages—which are to the designer what keys are to the musical composer—will be a great assistance to the mosaicist, an ignorance of, or an indifference to, them will lead him into great trouble and confusion.

In bringing this paper to a close, I may be permitted to say a few words with respect to specific style as affecting pictorial mosaic. We have seen that, as a decorative art applicable to monumental structures, it has survived every fluctuation and vicissitude which have affected architecture from the Christian epoch to our own time—as certainly will it outlive the little differences which split us up into Goths and Greeks—"big and little endians" of the professional golden eggs. We are now probably on the eve of introducing a new element into our national art, and happily one which may with precedent, and therefore with a good conscience, by those who lean heavily on precedent, be used alike in buildings of whatever historic style we may any of us peculiarly affect. Let me then express a hope that it may not be considered necessary to retain the defects and mannerisms either of too much or too little academic knowledge, peculiar to ancient, mediæval, or modern times; but that we may rather concur in doing the very best we any of us can with this art, without pedantry or a slavish deference to the past. The whole history of monumental and industrial art has shown us, that never is perfection attained in any product in which the material conditions, and the processes by which those conditions may be best enhanced and developed, have not formed the basis of the theory of construction, manufacture, or application, of any such product. This has held good of glass, stone, wood, marble, and of all the metals, and assured am I that, if we are to make this art of pictorial mosaic a credit to the nineteenth century, a similarly "objective" spirit must also direct and determine the specific mode in which, under every varying condition of style and historical association of ideas, we would endeavour to rival the great masters of old in their use of this time-honoured embellishment.

THE ESTIMATES FOR PUBLIC WORKS AND BUILDINGS.—The estimates for the public works and buildings for 1862-3 are—Royal Palaces, £33,583; Public Buildings, £89,510; Furniture of Public Offices, £14,611; Royal Parks and Pleasure Gardens, £84,664; New Houses of Parliament, £32,647; British Embassy Houses Abroad, £5,104; British Consulate, Constantinople, £450; Westminster Bridge Approaches, £2,500; New Westminster Bridge, £1,231; New Foreign Office, £15,000; Temporary Foreign Office, £1,250; Industrial Museum, Edinburgh, £10,000; Aberdeen University, £903; Probate Court and Registries, £10,000; National Gallery, £1,705; National Gallery, Dublin, £2,500; Harbours of Refuge, £150,000; Holyhead and Portpatrick Harbours, £101,221; Public Buildings, Ireland (including Kingstown Harbour), £96,342; New Record Buildings, Dublin, £5,000; Lighthouses Abroad, £11,904; Highland Roads, &c., Commissioners, £5,000; Rates for Government Property, £20,000. The entire estimate in this class is £695,215, showing an increase in some departments of £107,741, and a decrease in others of £247,192; the net decrease as compared with 1861-2 being £139,451.

GUANO AS A POLISHING POWDER.—The *London Review* says a compound of guano (100 parts), fine tripoli (25), common sea-salt (10), and wheat flour (12), is now being used for polishing metals and glass. Diluted alcohol is the vehicle for applying the powder.

A SUBSTITUTE FOR TURPENTINE.—A new product, which bids fair to compete with, if not to supersede, turpentine, has recently been obtained. It is distilled from petroleum and asphaltum. The Asphaltum Company have succeeded in producing this spirit, which can be used in the place of turpentine, without danger or fear. And as it can be obtained at one-third of the price cheaper than turpentine, it is likely to be extensively consumed.—*Mechanics' Magazine*.

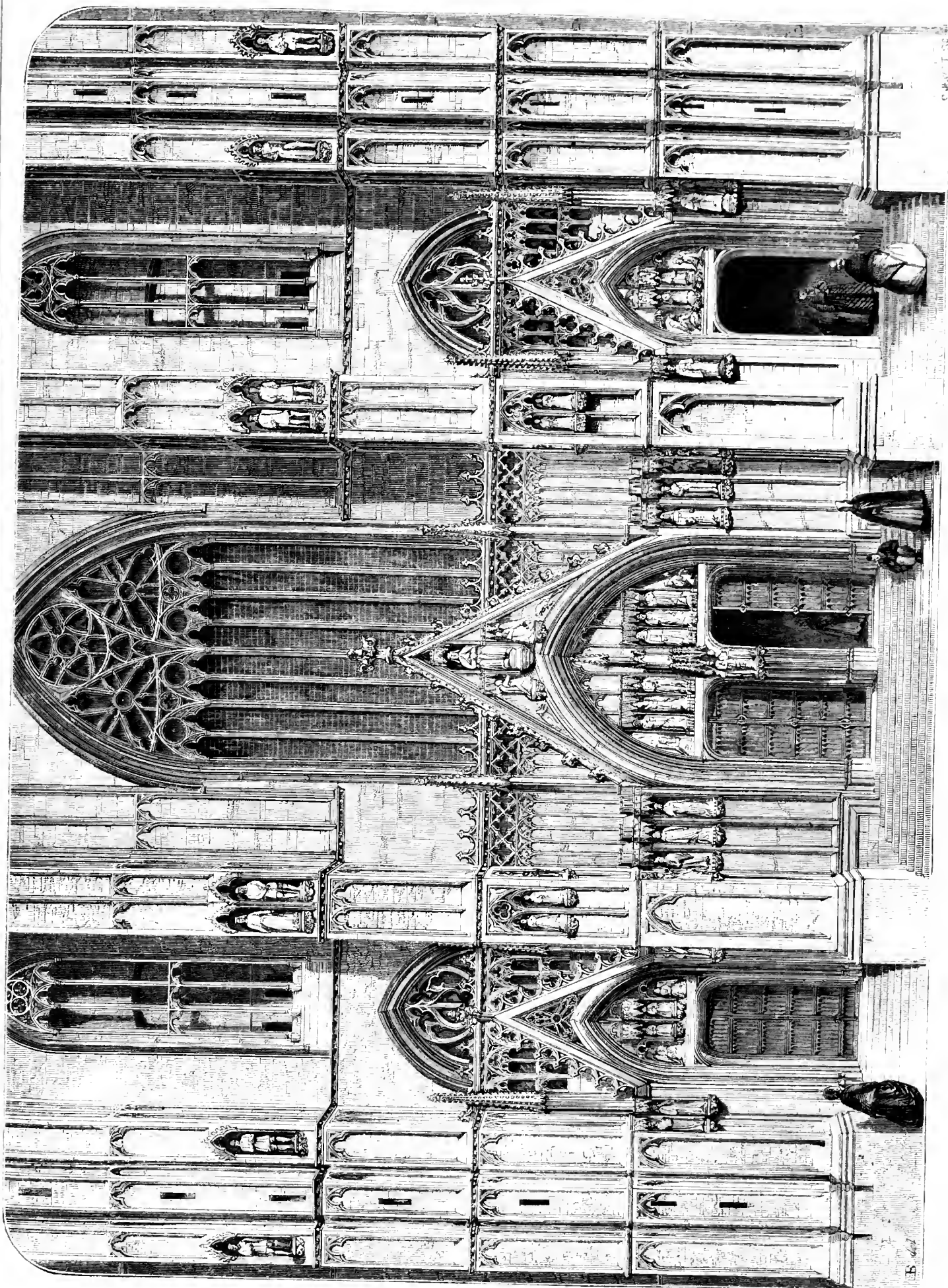
WORKS AT WORCESTER CATHEDRAL.

WORCESTER Cathedral has for some time past been undergoing renovation by the Ecclesiastical Commissioners, under the direction and superintendence of Mr. Perkins, of Worcester, architect. "In a few months the whole of the cathedral, from the great transept to the east end, including the choir, the Lady and other chapels, will have undergone a restoration of the completest character, and the public will have an opportunity of viewing this portion of the building pretty nearly as it stood before its Early English features were disfigured by the introduction of details belonging to later styles, or the barbarisms appropriate to the dark period between the Reformation and the recent revival of taste for Gothic architecture." The south side, east of the great transept, is now nearly completed; the work to the south aisle of the choir has been completed, and the chapel connected with it, recently used as a vestry. The windows of this chapel were in a very bad condition. The outer wall has been refaced where necessary. The corbel table and parapet have been restored, and Early English windows inserted. Some fears have been entertained that the groined roof of the aisle and chapel would require extensive repairs, but on removing the thick coats of whitewash and plaster that hid the masonry, it was found that a comparatively small expense would place the roof and the ribs of the groining in a sound condition. The groining will be pointed and grouted, and the materials left in their natural colour. The improvements on this side of the choir being nearly completed, the works are now being pushed forward on the north, and here a serious undertaking had to be encountered, arising from the condition of the smaller transept. From the ground to the apex of the gable of this transept the distance is at least 120 feet, and the masonry of the walls, piers, and buttresses is proportionately massive. The transept is in such a state that one of the piers—that near the stone pulpit in the choir—will have to be taken out and rebuilt; the windows on three sides will also require taking out and the walls above them rebuilding.

The floor of the choir and the steps leading up to the altar have been taken up, in order to allow of the erection of a framework of timber to support the roof of the transept and the groining connected with it, whilst the defective pier is taken down and rebuilt. This framework rises nearly to the springing of the arches, and holds up large horizontal timbers that take the weight which naturally rested on the faulty pier. At higher points the groining is supported in such a manner as to keep it firmly in its place during the rebuilding of the pier and such portions of the walls as require it. The wall which shuts up this transept from the choir is also partly pulled down, with a view, we believe, to its entire removal. In addition to the faulty pier above referred to, it will be necessary to rebuild nearly the whole of the arch of the first bay from it, going westward. Considerable progress has been made outside the building on this side, between the two transepts. The walls have been refaced wherever it was necessary; the corbel table and parapet have been restored, and the Perpendicular windows have given place to Early English. In the clerestory, the new windows are lancets in triplets; in the aisle, they are alternately two and three lancet lights under one common arch. We are told that vestiges of the original work remained to guide the architect in removing that of later periods, and putting in the new. The smaller transept still retains what are believed to be the original lancet windows, but these have been filled with tracery. The roof of the aisle will be renewed, and restored from nearly a flat to its original pitch. It has not been deemed advisable to remove the flying buttress which aids in supporting the wall and the clerestory, but it has been refaced and restored. These works will nearly complete the restoration of the Early English portion of the cathedral. The workmen are now busy with the great transept on the north side, which is Perpendicular. Mullions run from the top to the bottom of the principal window of this transept, and render it one of the ugliest that could disgrace a cathedral. A new window is to take its place, and as the opening is large, and the window is a principal feature of the edifice on the only side on which a full length view of the building can be obtained, we have no doubt that the architect will take advantage of the opportunity to put in a window that will be worthy of the situation. The fragment of the old conventual buildings lying between the Chapter House and the transept will probably be used for vestries and like purposes.

We have extracted the foregoing from an article in the *Worcester Journal*. The *Athenæum* speaks of the restorations as follows:—

"Every admirer of old carving will bear with regret that the beautiful works filling up the spandrels over the wall-arcade that runs round the east end, and its transepts, of Worcester Cathedral have been retouched with so ruthless a chisel that all their former beauty of execution has been destroyed. These carvings were amongst the most admirable in the country, being remarkable for fine and graceful treatment of drapery, which throughout had that peculiar flow and elegance which distinguish the best ages of Gothic sculpture and mark the intense love of his work which the carver had. They displayed finish without toilsomeness, conventionality without stiffness, natural ease and mastery of beautiful form. Now their place is taken by the poor and forced feeling for form in which some mechanical carver has recut them. No one but an artist executed these works; few artists, none without a reverent spirit, should have touched them. How often are the custodians of our ancient works of art to be told that restoration by common hands is ruin? It would have been better to have taken these things away altogether out of the wall, for preservation elsewhere, and to have replaced them with copies, which would have been no worse in character than are the originals. As now mutilated, it is lamentable to see them, every sweet and thoughtful curve and delicate line of loving study has been scraped down to the poor form of a Birmingham metal casting. All richness of surface has, of course, vanished. Extensive 'restorations' are yet going on in the Cathedral, of the general merit of which we do not desire to speak until they have passed over the edifice. To the east end of the building these are at present confined. In the great east window was of yore a good deal of old glass, composed of fragments from many minor lights, it is true, but skilfully enough arranged. All this has gone, and its place given to a weak, poorly-tinted and commonplace example of stained glass. The old glass has been removed, as far as we can learn, entirely from the building; which is a sad mistake, seeing that there was enough, skilfully managed, to have filled half-a-dozen of the smaller windows in the clerestory. It is to be hoped that some heed will be given to these matters of glass and carving before further works are undertaken in this cathedral. Triple-lancet lights are being placed in the parts that are being 'restored' in place of the old, but certainly not original windows. All lovers of ceramic art will remember the tiles, with their armorials and many patterns, which rendered the old singing-school of this cathedral so famous. We learned, in the building itself, that most of these are destroyed, and saw that the result of some excavations beneath one of the



PART OF THE WEST FRONT OF ST. GUDULE, BRUSSELS.



apartments had been to bring down the floor. We must not omit to add, that while the old glass from the great east window has been removed, without thought it would appear, a foolish seventeenth-century transparency in glass, standing in the eastern light of the north (chancel) aisle, has been religiously preserved. The Guesier Hall, about which there was much discussion some time since, stands as it did."

Then we have a letter from a correspondent, who says that the foregoing account of the injury done to the sculpture, and the observations upon the works generally now going on at the cathedral, are "quite incorrect, being one tissue of falsehoods from beginning to end."

We may give our own account of the restoration before long.

ON BUILDING STONES.

THE following is the substance of a paper read before the Civil and Mechanical Engineers' Society, on the 13th inst., by Mr. J. B. WALTON, V.P.:

Arenaceous or siliceous rocks are generally composed of grains of sand, which are rounded as if by the action of running water, and bound together by some calcareous or siliceous cement. These rocks, which are termed sandstones, are sometimes found with the grains of sand extremely coarse, and, again, delicately fine. This coarseness or fineness is, however, of trifling importance in comparison with the nature of the materials by which the particles are cemented. Many sandstones have their parts so loosely united as to be totally unfit for building purposes, this being the nature of the rock which underlies the town and castle of Nottingham. Purely siliceous sandstones are admirably adapted to withstand the influences of wind and weather; but where there is an admixture of siliceous with other materials, great skill is required to select a durable building stone.

Argillaceous rocks scarcely admit of a general description, but most of them emit a peculiar earthy odour when breathed upon, and consist of silica and alumina, with small proportions of lime and magnesia.

Cretaceous rocks, or limestones, are composed of lime and carbonic acid. Many of these stones consist of fragments of shells and corals, which are united by means of a calcareous cement. Those belonging to the oolitic group are found to consist of small egg-like grains, each of which has a particle of sand for a nucleus, around which are formed concentric layers of calcareous matter.

Limestones and sandstones of the same specific gravity are found to exhibit the following relations:—As regards the resistance to a compressive force, the sandstone has a superiority over the limestone nearly in the proportion of three to two; the absorbing power of the sandstone is less than that of the limestone, as the former absorbs .007 of its bulk, while the latter absorbs .114. The sandstone will be composed of silica with a small percentage of carbonate of lime, and the limestone will consist chiefly of carbonate of lime with small quantities of silica and magnesia.

The author then reviewed the building materials of the Pliocene, Eocene, and Wealden deposits, describing more particularly the Kentish rag of the lower greensand series, and the Sussex and Purbeck marbles of the Wealden formation. The latter were stated to have been much employed in the embellishment of our ecclesiastical edifices in the middle ages.

The oolitic rocks were next described, and full particulars were given of the Portland, Ancaster, Bath, and Ketton limestones. It was remarked as a singular fact, that with reference to the oolitic rocks, the top beds are invariably the hardest, while the lower are extremely liable to decay. Portland stone was stated to be far superior to the Bath and other stones of this formation, and also to be decidedly the best material to withstand the trying influences of the London atmosphere. The average weight of Portland stone is 135½ lbs. to a cubic foot, its specific gravity 2.145, and its absorbing power 0.206. The analysis of this stone as given by the Commissioners in their report of 1833 is as follows:—

Silica	1.20
Carbonate of lime	95.16
Carbonate of magnesia	1.20
Iron and alumina .....	.50
Water and loss	1.94
	100.00

The analysis of the Ancaster, Bath, and Ketton stones, according to the same authorities, is as follows:—

	Ancaster.	Bath.	Ketton.
Carbonate of lime	93.59	94.52	92.17
Carbonate of magnesia	2.90	2.50	4.10
Iron and alumina .....	.80	1.20	.49
Water and loss	2.71	1.78	2.83
	100.00	100.00	100.00

The oolitic stones of Oxford and Northampton were next referred to, particular notice being directed to the yellowish and rusty appearance of the buildings in these vicinities, and to the lamentable symptoms of decay which many of them exhibit.

The Permian or magnesian limestone series was then next described, and particulars were given with reference to the selection from these deposits of the material for the construction of the New Houses of Parliament. The Commissioners first recommended the Bolsover quarries, from having observed that the Norman porch of Southwell Minster, which was supposed to have been executed in this stone, was as free from decay as when it was erected eight hundred years back. These quarries were, however, abandoned in consequence of the stone being small in bed and difficult to remove from the earth. The Anston beds, in Yorkshire, belonging to the Duke of Leeds, situated about five or six miles from Bolsover, were then examined and found to fulfil the requirements of the Commissioners, so this stone was adopted, and delivered in London at the rate of 200,000 cubic feet per annum for several years.

Numbers of buildings have been executed in this material, both in London and the country, and instances were given in which the stonework is already suffering much from decay.

The analysis of the Anston stone is as follows:—

Carbonate of lime	54.89
Carbonate of magnesia	42.07
Protoxide of iron	0.49
Peroxide of iron	0.55
Silica	0.51
Water	0.24

The magnesian limestones of this district were stated to be very numerous, and

to vary but slightly in their chemical constituents; that quarried at Mansfield Woodhouse, in Nottinghamshire, was described as being more durable than the Anston stone, but so expensive to work that it is but seldom employed. It was used by Mr. Gilbert Scott in the construction of the Martyrs' Memorial at Oxford, in 1840, and is found to stand remarkably well.

The Cragleith and Bramley Fall sandstones of the carboniferous system were described at some length, and were stated to be admirably adapted to resist a great compressive force, and to withstand the varied influences of weather, wind, and water. The average weight of a cubic foot of Cragleith is 146, and of Bramley Fall, 142½ lbs. The latter is capable of withstanding a pressure of 109,000 lbs. to a cubic foot, which is nearly the amount safely sustained by Portland. The piers of the railway bridge at Pimlico and Fulham are constructed with this material.

For the Silurian, Cambrian, and Devonian systems all furnish excellent materials for building, and were described at some length by the author.

A review was then given of the igneous or unstratified rocks, particular mention being made of granite, syenite, and greenstone. The decay of granite was briefly noticed, and accounts were given of the strength of several varieties of this material, including the Aberdeen, Peterhead, and Cornish granites. The Aberdeen granite is considerably lighter than that quarried in Cornwall, but possesses nearly double the resisting power to a compressive strain.

Particulars were given with reference to the expansion of stones, and an account of some experiments recorded in the "Transactions of the Royal Society of Edinburgh" was related, from which it appeared that the building stones in common use expanded nearly in the same proportion as cast iron.

The author concluded his paper with some observations on the decay of stone, and made especial reference to the decomposition of the materials employed in the construction of the Houses of Parliament. An analysis of the evidence taken before the committee appointed to inquire into the decay was given. It appeared, from the evidence of Mr. C. H. Smith, one of the commissioners of 1838, that the stone was all taken indiscriminately from the quarry, and that the selection was left to persons who had little knowledge of the subject. The decay was stated to be most apparent in all damp and sheltered situations, the stone being in good preservation in many places where it was exposed to the full action of wind and weather.

PART OF WEST FRONT, ST. GUDULE, BRUSSELS.

WE gave, at page 91 of our present volume, a view of the south entrance to this interesting church, and are now able to present our readers with an engraving of a portion of the western façade, showing the principal entrance on that side. To the notes accompanying our former illustration we may add that the west window dates 1528, that the church was restored to some extent in 1843, while more extensive restorations were commenced in 1859. In the interior the carved pulpit, by Verbruggen, representing Adam and Eve driven out of Paradise, is well known; it is said to have been executed for the Jesuits at Louvain, and to have been presented to St. Gudule by Marie Thérèse.

ANCIENT INDIAN TOMBS.—On the 18th inst. Mr. W. Bollaert read a paper before the Ethnological Society "On the Ancient Indian Tombs of Chiriqui in Veragua, Isthmus of Darien." Columbus, in his last voyage, discovered the east coast of a region on the mainland of America, called Veragua. The burial-places of the aborigines of this district were by accident, in 1859, found to be treasures of golden ornaments. They contain also antique baked pottery of rude but chaste and not inelegant forms. Everywhere throughout the country their tombs are found, and monuments and columns covered with figures are met with. The Chiriqui tombs were opened in great numbers in the year referred to (1859), when, at one time, no less than 1,500 persons were engaged in digging and ransacking the graves at Bugabita—a plain of a mile square, surrounded by high mountains. Two hundred and fifty pounds' weight of gold was obtained in less than three months, of the estimated value of £12,500. In the centre of the plain is a mound of stones four or five yards high, and all round it are the "huacas de depositos," or graves, containing gold. Outside of these are other graves, the "huacas de sepultura," which are of a poorer sort, and contain none of the precious ornaments. The "huacas de depositos" are formed with stones laid on the surface in fives, in the form of circles, crosses, parallel rows, semi-circles, rings with four equi-distant large blocks, and in other definite forms. Many other rich tombs have since been elsewhere discovered, and the whole of this portion of the isthmus appears to be a vast cemetery. Amongst the gold objects are bats, frogs, alligators, tapirs—all of new world types—the guacamayo, or "sacred parrot," and figures of hideous, obscene, or grotesque forms. The tombs and their contents the author considers to be about seven or eight hundred years old, and to have been the work of the Durschos—a race he conjectures to have been derived from the Chorotegan nation of Nicaragua. Such monuments as the "Piedra Pintal"—a great stone 50 feet long and 15 feet high, near Caldera, covered with representations of the sun, human heads, scorpions, and other figures, he believed to be of much older date, and carved by an older people than the Durschos.

THE EXCAVATIONS AT CYRENE.—Mr. Vaux read a paper before the Royal Society of Literature on the 12th inst., on the Excavations of Cyrene, in which he gave an account of the researches which have been recently instituted at that place by Lieut. Smith, R.E., an officer who was associated with Mr. Newton, when he was engaged in the excavations at Halicarnassus. Lieut. Smith spent several months during the winter and spring of 1861 at Cyrene, and was fortunate enough to make a series of discoveries which have greatly enriched the national collection. Among these is a statue of Apollo Citharæus, which is considered to be a genuine Greek work of the Macedonian or post Alexandrian age; or a copy of a first-class work of that period, made during the Augustan times. Besides this, nearly 200 other objects of greater or less interest were found, among which are statues of Diana, Bacchus, Esculapius, Venus, &c.; some busts of Roman Emperors, such as Antoninus Pius, Aurelius, Faustina, Jun., and a large number of statuettes, some very small and perfectly preserved, and some curious bas-reliefs.

ON THE SEWERING OF TOWNS AND DRAINING OF HOUSES.*

TOWN sewerage on a grand scale is certainly co-existent with the Roman Empire, and earthenware pipes are, probably, as old as the art of pottery. It has been ascertained that pipes of earthenware, "hand-thrown" on a potter's wheel, and not unlike, in form and dimensions, to hand-made pipes of the present day, were used throughout the East in the remotest periods we are acquainted with, to conduct springs of water for human uses.

Earthenware pipes have been found beneath the great mounds of Assyrian ruins, which pipes are supposed to have been drains; and the stalls in the Colosseum of Rome were drained with earthenware pipes. Earthenware pipes were also used by the Romans for watercourses.

The cloaca of Rome, including the Cloaca Maxima, according to Livy, are as old as the reign of Tarquinius Superbus. Some authors declare that the construction of these public sewers must belong to an Etruscan nation, which preceded the birth of Romulus and Remus.

These old sewers, the ruins of which are to be seen in Rome to this day, were also "subways" and sewers, having raised paths along the sides, and "side-entrances" for tributaries from palaces and fountains. There were large cloacae in the several cities throughout the empire, as—see Pliny's letters to the Emperor Trajan. I have met, in the works of the travellers, with descriptions of other ancient sewers and drains found beneath ruins in the East, the date of the formation of such sewers being lost in the darkness of antiquity. It is, no doubt, impossible to trace out the origin of sewers and drains; their "invention," construction, and use, probably took place and commenced with civilisation. We cannot, however, settle this point now. We have another purpose, namely, to discuss the uses and the abuses of sewers and drains at this day.

The Roman cloacae were, probably, in many instances, of the character of the great sewers in this metropolis—the Fleet, the Ranelagh, and others—watercourses enclosed and arched to serve as sewers.

The remains of sewers and drains found amidst ruins show us that their application was limited, and their uses only imperfectly understood. If sewers and drains had been generally in use amidst the populous cities and towns of antiquity we should now find their remains abundantly. We know the extent of the Roman Empire more fully and better by the buried remains of Roman pottery than by history, or than by any ruins or traces of ruins remaining on the surface. Brick sewers and earthenware pipe drains, if they had ever existed, would have been as enduring in their materials as frail pottery, or as the stone and brick cloacae of ancient Rome and the drains of the Colosseum. We do not find such remains in abundance, and therefore conclude that a limited construction only took place for special purposes.

The Roman cloacae were originally under the superintendence of the censors; subsequently under that of the aediles. The Emperors Agrippa and Trajan constructed many cloacae during their reigns. We, in these modern times, divest our Imperial Government of all such useful power.

Earthenware pipes, of three and four inches diameter, were made in England more than half-a-century since, in Lambeth and in other places. Mr. Doniton, Sen., can recollect their being made during this space of time, and I have received other evidence as to the make of earthenware pipes forty or fifty years ago in England. The first modern use of them, for sewer purposes, was suggested by Edwin Chadwick, Esq., C.B., soon after the year 1840. Mr. John Roe states in his Report to the Harrow Local Board of Health (1854):—"The introduction of stoneware pipes for general drainage arose from a suggestion made by Mr. Chadwick to me, in his desire to obtain smooth interior surface; and the first sewer pipes made for that purpose in the metropolis were for the Holborn and Finsbury office, in consequence." Mr. Roe further states, "Immense benefit to sanitary measures has been afforded by the use of earthenware pipes, where judiciously applied and properly laid. They save fully two-thirds the cost of brick sewers; that is, where brick sewers for a town would cost £50,000, the same town may be sewered by earthenware pipes for a cost of £10,000, and the cheaper pipes will effect the work far safer to health and life than the costly brick constructions. Combined back drainage is of the utmost importance, in point of economy, and also in efficiency of working, where the drain pipes are properly laid. There are many thousands of instances of successfully combined back drainage, in scores of towns, and complaints of failure or of annoyance are very rare. I do not think they amount to 1 per cent. upon the work executed." Mr. John Roe, in 1854, states that, "Thirty-six years previously (1818), 200 houses on one estate, in the Holborn and Finsbury districts, had combined back drainage, and no complaint of their working or otherwise ever came in that period of time to the office." Mr. Roe further states, "In many country towns and places, back drainage may be usefully adopted." This is the doctrine of the first Board of Health anticipated and confirmed. In some places back drainage will be impracticable, and, of course, should not then be adopted.

It is a great advantage to have a regular flow of water through any sewer. Drains are choked more from want of water than by having too much passed through them. Combine drains as much as practicable, lay them well, joint them evenly, properly, and smoothly, and there will be very few if any chokings.

Fully to understand the worst effects of want of sanitary arrangements in towns, we must go back to the days of the plague, sweating-sickness, and other similar diseases, and read up the literature of 1600 and 1700, by Nathan Hodges, M.D., on the Plague of London, 1665; a Discourse on the Plague, by Dr. Mead: an Essay on the Different Causes of Pestilential Diseases, by John Quincy, M.D., and others; until we come to James Lind, M.D., and Sir John Pringle, the one on diseases in the navy, and the other on diseases in the army. We may then visit the cities and towns in the East, where plague rages to this day, and see the causes in existence which prevailed in England two centuries since—some of which causes prevail even now. Filth, squalor, darkness, neglect, vice, crime, and premature death; and annual mortality of 40, 50, and 60 in the 1,000 regularly, with an increase up to 100, 200, and even, in some places, 500, or a moiety of the entire population in one year, of plague and general sickness; "the living too few to bury the dead." The annual mortality of England at present ranges from 30 to as low as 15, and even 11 in each 1,000. It is thought 15 ought not to be exceeded even in our towns.

The Sanitary Commission of 1855 in the Crimea showed what could be done for an army in the field, were the mortality fell below that of the same troops in barracks at home, the French Army knowing no such abatement. When fever had been all but banished from the British army and hospitals, the French at the end of the war were said to be losing by sickness in hospitals at a rate of 5,000 per month; that is 15,000 men died in hospitals during the last three months of the war according to French return.

There are, no doubt, many causes for disease in excess, but overcrowding, defective ventilation, and surrounding filth, seem to be the worst.

Proper sewers and drains will improve a town, but will not do all that is required. The causes of fever in Liverpool, previous to the year 1840, were overcrowded cellar dwellings. The causes in Glasgow and in Edinburgh were overcrowded upper rooms and attics. The narrow streets, crowded houses, and small rooms of many continental towns may be improved by sewerage, drainage, surface pavements, and regular cleansing. But many of the causes of disease in excess might remain.

There are laws relating to sewers from Magna Charta to recent times. Calls, on the law of sewers, is the great authority. These laws, however, relate to sea defences, weirs, rivers, estuaries, and land-floods, rather than to town sewers.

Sewers were first constructed in London under an Act (6 Henry, VI. c. 5), 1428, amended by Parliament in the reign of Henry VIII., and since this period to the present time there have been many amendments and alterations of laws for regulating sewers, into which I do not propose to inquire. The streets of London were begun to be paved in 1533.

The first sewers in London would no doubt be in the several valleys on the line of existing watercourses, the Fleet Ditch, the Ranelagh Level, &c. These watercourses were arched over, and the drainage of the adjoining streets and houses passed into them.

Stowe states that, "Antiently, until the time of the Conqueror, and two hundred years later, this City of London was watered (besides the famous river of Thames on the south part), with the river of the Wells, as it was then called, on the west; with a water called Walbrook, running, through the midst of the city, into the river of Thames, sewerage the

heart thereof; and with a fourth water, or bourn, which ran within the city through Langbourn Ward, watering that part in the east. In the west suburbs was also another great water, called Oldborn, which had its fall into the river of Wells."

The Fleet Ditch (*) was no doubt originally (in ordinary weather) a stream of bright, sparkling, sweet, and wholesome spring water—a river of "wells." But as early as 1290 the monks of White Friars complained to the king that the putrid exhalations arising from the river of Wells or Fleet were so powerful as to overcome all the frankincense burned at their altars during divine service, and even occasioning the deaths of many of the brethren. The Fleet continued to receive additional impurities, until it became in the time of Pope—

"The king of dykes, than whom no sluice of mud
With deeper sable blots the silver flood."

Barges are said to have sailed up the Cloaca Maxima and the Fleet sewer alike; in both instances natural watercourses having been arched over and made the receptacles of sewage.

Although the first formation of public sewers in the British metropolis dates so far back as 1428, by far the greater portion of the 1,500 miles of the main sewers in London have been constructed since the year 1824, Mr. John Roe having had the perseverance, honour, and credit of effecting more improvements in the main sewers of his districts, Holborn and Finsbury, up to the end of his period of service, than any other man. The improvement of adopting the egg-shape, in place of vertical sides, for sewers, the introduction of side entrances, and means of flushing, and the experiments carried out by Mr. Roe, and tables based on these experiments, are invaluable for the metropolis. Mr. Roe found the construction of sewers a matter of guess; he left it a matter of scientific certainty. If all the sewers of this great metropolis had been laid out and constructed on the plan proposed and adopted by Mr. Roe in his divisions, vast additional sums of money would have been saved, and (humanly speaking) many lives prolonged; the flat-bottomed sewers which now exist would have had semicircular channels, and the deposit which now accumulates and corrupts would have been regularly washed out, or periodically "flushed" out at short intervals. Mr. Haywood has more recently done for the City what Mr. Roe did for Holborn and Finsbury.

The ventilation of sewers by vertical shafts and open grates in the centres of the streets was, no doubt, an improvement, though a very clumsy and disagreeable plan. Previous to the formation of these open ventilators, typhus and typhoid fevers prevailed in many houses connected by drains with the sewers and near to the untrapped gully-holes.

Mr. Fuller, a medical gentleman, in his evidence, 1834, states that eight-tenths of all the cases of typhus fever he witnessed he could trace to foul drains or foul gullies. The late Dr. Southwood Smith gave evidence to the same effect.

At present there is much injury effected by sewer gases passing through drains and into houses. In 1859, on the use of a disinfectant in the public sewers having a powerful odour, all the houses directly drained by these sewers were tainted, showing that there was a flow of air from the sewers to the houses. This should not be, and can only be avoided by external ventilation of each house-drain.

The question of sewerage and drainage concerns the poor more than the wealthy. Firstly, on account of numbers; and, secondly, because of close crowding. The poor must live, or linger rather, in squalor, sickness, and misery, and die prematurely, in such habitations as are provided for them. The fatal room tenements in English towns, the mud cabins of Ireland, and the booths of Scotland, all tend to fill our gnoles, lunatic asylums, and workhouses. When shall we learn and fully comprehend the fact that it will be more in accordance with the requirements of civilisation, and even more economical, to prevent vice, and to make virtue possible, rather than to expend all our energies on reformatories, to make home comfortable rather than to build and endow public libraries, lecture-rooms, and reading-rooms? Do not neglect these, but first make the poor man's home wholesome.

The preponderance of numbers is shown in the case of Manchester and Salford. From a return by the Poor Law Board of the numbers and occupiers of dwellings in parliamentary boroughs, it is shown that in Manchester, in 1859, there were 64,426 separate dwellings, of which number 24,457, or 38 per cent., were of £10 annual rental or upwards; 22,538, or 35 per cent., below £10 and above £6 rental; and 17,431, or 27 per cent., not exceeding £6; or, in the whole, about 62 per cent. at and below £10 rental.

In Salford there were 20,156 dwellings; 5,205, or 26 per cent., of £10 rental and above; 8,131, or 40 per cent., of £6, and below £10 rental; 6,820, or 34 per cent., not exceeding £6 rental.

Taking Manchester and Salford in one district, there were 84,582 dwellings, of which 29,662, or 35 per cent., were £10 rental and upwards; 30,669, or 36 per cent., of £6, and not exceeding £10 rental; and 24,251, or 29 per cent., at and under £6 annual rental.

Many of the houses below £8 per annum rental are of faulty construction. They are generally in rows, back to back, having no back doors nor windows, no yard nor privy, no sinkstone, nor internal water supply. Many sleeping-rooms have no fire, nor adequate means of ventilation. Privies have to be used in common, and, of course, are not what the name implies; they are frequently ruinous, and sickeningly dirty. Experience has shown that numbers of families should not be compelled to use privies common to several houses, unless regular cleansing is enforced. Every dwelling-house should have its own convenience. It is a libel on the poor to say they will not care for their own comfort. There are thousands of instances to the contrary. In Manchester, for the poor, waterclosets are the exception. The local municipal regulations discountenance them.

The annual death-rate in Manchester is 30.56 per thousand, or double the death-rate in some districts. The death-rate throughout the manufacturing towns of Lancashire and Yorkshire generally is high, and will continue to be so until better sanitary regulations are adopted and enforced.

The excuse offered by the Manchester Corporation is, "supplying the poor with water-closets would waste water and foul the rivers." Proper apparatus will prevent the first, and intercepting sewers the latter.

London shows a diminished death-rate in proportion to the abolition of cesspools, although the sewerage is most defective, and the River Thames is foned. Many thousands of cesspools have been abolished in the metropolis, probably not less than 100,000, within the last twenty years, but many thousands remain. Mr. John Roe, and some of the other district engineers, improved many miles in length of the metropolitan sewers and drains, but there are many miles in length ruinous and foul. London is, however, much more healthy than the manufacturing towns of Lancashire and Yorkshire.

Those who wish to experience the horrible character of the cess-pits, and middens of Manchester, Liverpool, and other northern towns, should study the statistics as they are weekly recorded, of 1,200 and 1,400 such places emptied, and then make a few night inspections of the localities in the hands of the "nightmen"; the stench is abominable, many times worse than the Thames at its worst. The rivers flowing through Manchester can scarcely be worse than at present. The Irwell, the Medlock, and the Irk, are a disgrace to our civilisation. They are fouled from their sources to their estuary; and if the erection of waterclosets could be absolutely prohibited the construction of intercepting sewers should be made imperative. The solids of sewage can be precipitated, but agricultural land is the proper place and use for sewage.

In many cities and towns where sewerage and drainage are carried out, waterclosets are in general use. This is the case in the metropolis. For several years past some 1,000 soil-pans have been made and sold per week, or some 50,000 per annum, and they are, of course, used. In the cities and towns of Berwick-upon-Tweed, Alnwick, Morpeth, Carlisle, Lancaster, Halifax, Worsley, and many other places in England, the poor use this convenience and do not abuse it.

In Manchester 100,000 loads of night-soil are annually removed at a loss of some £6,000 per annum. In London the removal of dry ashes produces an income to the parishes.

There is no general rule for the dimensions of town sewers for populations below 100,000 in proportion to surface area, and any engineer who adopts the dimensions given in certain published tables will most probably make an expensive mistake for the district in which he is operating. The tables which are based on experiments made in the metropolitan sewers are, no doubt, correct and absolute for the districts from which they were constructed, and will be applicable to any other similar district, if all the peculiarities and

* Paper read at the Society of Arts, by Mr. ROBERT RAWLINSON, C.E., F.G.S., &c., March 19th.

* "Fleet." This name is derived from the rapid flow of water from the districts drained.

contingencies are similar; but they are not applicable to towns generally. I have never used these rules, and should have caused great waste of money if I had done so. The science of engineering cannot be tabulated, and this truth ought to be inculcated on every student. As well say that all sorts of diseases can be cured with one set or sort of pills, as that tables of strengths of materials and dimensions of sewers can be relied upon without the experience of practice. The published tables I allude to have worked injury, not only in Great Britain, but all over the Continent, where many sewerage works have been attempted. The civilised world looks to this country for practical information on this subject.

The recorded experiments of the best hydraulic engineers on the flow of water in open channels and in pipes may be relied upon. There is little to learn in this branch of hydraulics. Pipes have capacity in proportion to the squares of their diameters, and water obtains downward velocity in strict accordance with the laws of gravity, modified by friction in its thousands of forms. The invert gradient of a sewer is one element in the law of flow. The head of water and delivery are other elements, giving velocity and scouring power. I only object to tables of sectional dimensions for general use. The town of Alnwick, in Northumberland, with its 2,000 acres of drainage area, its 7,000 population, and some 1,000 waterclosets, is sewered by an earthenware pipe 18 inches diameter, and having a gradient of 1 in 400. Carlisle, with its 1,300 acres of drainage area and 35,000 population, has an outlet sewer of 3 feet 9 inches by 2 feet 6 inches, with a fall of 1 in 700.

At Workop the outlet sewer is an earthenware pipe, 15 inches diameter, laid at an inclination of 1 in 600. The population is upwards of 7,000, and the drainage area very large.

At Lancaster the outlet sewer is of brick, 5 feet 3 inches by 3 feet 6 inches, and laid at an inclination of 1 in 1,000. The population is about 15,000, and the drainage area considerable, having a rapid fall in some parts.

At West Ham, with an area of 4,730 acres, principally of flat water-logged marsh land, the outlet sewer is of brick, 5 feet 3 inches by 3 feet 6 inches, having a cast-iron invert laid level, and at low-water line of spring tides.

In all these cases the dimensions of the outlet sewers do not accord with the tables alluded to, and yet the sewers perform the work required to be done. Surface water and heavy falls of rain pass, as previously, over the surface, but there is not a duplicate system, nor do I advocate such.

At Carlisle the outlet is frequently blocked by land floods. At Lancaster, daily, by tides; and at West Ham pumping is resorted to.*

SUBJECTS FOR MEDALS AND PRIZES OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS FOR 1863.

At a Special General Meeting of the Institute, the following recommendation of the Council, with reference to the Royal Medal for the year 1862, was read and agreed to:—"Her Majesty having been pleased to grant her gracious permission that the Royal Medal be conferred on such distinguished architect or man of science, of any country, as may have designed or executed any building of high merit, or produced a work tending to promote or facilitate the knowledge of architecture, or the various branches of science connected therewith, that the Council do proceed, in the January, 1863, to take into consideration the appropriation of the Royal Medal."

The following recommendations of the Council were also read and agreed to:—

Institute Medal.—That the Silver Medal of the Institute be awarded to the author of the best essay on either of the following subjects:—1st. The application of coloured bricks and terra-cotta to modern architecture. 2nd. The application of timber work in England, constructively and artistically, from the year 1400 to the present time. 3rd. On the stained glass of the twelfth and thirteenth centuries. 4th. On the use of concrete for vaults and roofing purposes. That the Silver Medal of the Institute, with Five Guineas, be also awarded for the best illustrations, geometrically drawn from actual measurement (with dimensions figured, both on the drawings showing the general arrangements, and on the details), together with descriptive particulars, of an abbey gateway, a bridge, or other Mediaeval building in the United Kingdom, hitherto unpublished in that manner. The Council suggest the following as being subjects worthy of illustration, but others may equally well be taken, if more convenient to the competitor:—Cambridgeshire—Gateway at Ely; one of the bridges of the county. Huntingdonshire—One of the bridges of the county. Herefordshire—The Abbey d'Ore in the Golden Valley. Hertfordshire—St. Alban's Eastern Chapels, including Lady and Ante Chapels. Middlesex—Ely-place Chapel, London. Nottinghamshire—The Chapter House, Southwell; west front of Newstead Abbey. Somersetshire—St. Joseph's Chapel, Glastonbury; King Ina's Palace. Shropshire—Lilleshall Abbey. Staffordshire—Croxdon Abbey. Sussex—Battle Abbey Gateway. Yorkshire—Kirkham Abbey Gateway and Cloisters. Wales—Chepstow Castle. Scotland—Dryburgh, Kelso, or Melrose Abbey; Monastery at Iona, Elgin Cathedral. Ireland—Cashel Cathedral; Jerpoint Abbey. The drawings to consist of at least one plan, an elevation, and a section, drawn to the scale of $\frac{1}{4}$ of an inch to the foot, with details to a larger scale. The elevations to be in line only, and the plans and sections to be tinted in sepia only. Perspective drawings may be also sent, and may be either hatched in, or tinted in sepia, or in indian ink. The jointing of the masonry to be particularly marked, together with the mode of construction and material used. It is strongly recommended that the rough drawings be plotted on the spot, and sent up to the Institute with the fair drawings. These medals are open to all members of the profession, without limitation as to age.

Soane Medallion.—That the Soane Medallion be awarded for the best design, well illustrated by a sufficient number of drawings, for a Parochial Church, to contain 1,500 persons, and arranged for the Protestant worship, without any detached columns or piers, and so as to leave the sight and view clear and unobstructed throughout. The style may be either Italian or Mediaeval. The drawings to consist of plans, sections, and elevations, drawn to the scale of $\frac{1}{4}$ of an inch to the foot, together with a bird's-eye view of the whole arrangement and a block plan. Each of the two latter drawings to be to such a scale as a sheet of double elephant paper will admit. The plans and sections to be tinted in sepia only, and the elevations to be in line only. Perspective drawings may also be sent, and they may be tinted or hatched. The successful competitor, if he go abroad within three years after receiving the medallion, will be entitled to the sum of £50 at the end of one year's absence, on sending satisfactory evidence of his progress and his studies. The competition for the Soane Medallion is open to all members of the profession under the age of thirty years.

Prize offered by the President, Mr. Tite, M.P., F.R.S.—That a Prize of Ten Guineas be awarded to the author of the best set of architectural drawings, executed in the best manner, and in the Italian style of architecture, for public buildings adapted to modern wants, e.g., churches, town halls, railway stations, public offices, &c., in England. The drawings to be in colour and shaded, and they may be drawn either in perspective, or geometrically. If in perspective, they are to be of the size which a sheet of imperial paper will admit. If drawn geometrically, they must be to the scale of $\frac{1}{4}$ of an inch to the foot. A plan,

tinted in sepia, of the principal floor of the building, drawn to a scale of $\frac{1}{4}$ of an inch to the foot, is to accompany each set of sketches. The competition is open to all Associates and Students of the Institute. Each set is to consist of not less than two, and not more than three, drawings.

Sir Francis E. Scott's Prize.—That a Prize of Ten Guineas, offered annually by Sir Francis E. Scott, Bart., for the term of five years, be awarded to the author of the best set of drawings for a building of moderate dimensions, devoted to civic or domestic purposes, in accordance, throughout, with modern requirements, and designed in harmony with the style of architecture of the thirteenth or of the fourteenth century. The drawings may be either outlined, coloured, or tinted, and drawn either geometrically or in perspective. If in perspective, they are to be of the size of a sheet of imperial paper. If geometrically, to be to the scale of $\frac{1}{4}$ of an inch to the foot. In all cases to be accompanied with a plan, tinted in sepia, of the principal floor of the building, and details of some part of the furniture, fittings, stone-work, metal-work, &c., are to be sent in drawn to scale and finished in any manner chosen by the candidate. The competition is open to all students in architecture under the age of twenty-five years.

Students' Prize.—(For students of the Institute only.)—That the subject of the design for the Students' Prize in Books for the year 1862 be "A Drinking Fountain." The drawings to be executed to the scale of $\frac{1}{4}$ of an inch to the foot; the plans and sections to be tinted in sepia, and the elevation to be in outline, etched or tinted in sepia. Perspective drawings are not necessarily required, but may be sent, and be in outline etched, or tinted in sepia.

Students' Monthly Prizes.—(By students of the Institute only.)—The following subjects have been selected for the sketches for 1862, to be taken as nearly as possible in the order given, attention being requested to their being forwarded to the hon. secretaries at, or soon after, the end of each month. List of subjects:—A spandrel filled with foliage; ditto with open tracery; a niche with pedestal; ceiling; stone diaper; corbel; cross; mouldings (with sections); scroll-work in stone or plaster; scroll-work in iron or wood; capital, moulded, seen from below; ditto, foliated. The sketches to be made from actual buildings, or from casts, or other examples in relief. Any student may send a study or studies from the human figure in place of either or any of the above subjects, provided only that the said studies do not exceed in number one-half of his architectural sketches. All the sketches to be at least as large as a half-sheet of imperial will admit. They may be in outline only, or etched in, coloured, or tinted.

Directions for Competitors.—Each essay and set of drawings is to be distinguished only by a motto, without the name of the author attached; but it is to be accompanied by a letter, sealed with a blank seal, and having on the outside the same motto as that attached to the essay or drawings, and enclosing his name, with an address to which a communication may be sent. The packet directed, "To the Honorary Secretaries of the Royal Institute of British Architects," and marked *Essay for Medal* (or) *Drawings for Medal (Motto)*, is to be delivered at the rooms of the Institute on or before the 31st of December, 1862. Only the envelopes containing the names of the successful competitors will be opened. Should none of the essays, drawings, subjects, or buildings respectively, be deemed by the Institute of sufficient merit and importance to deserve the distinction of the premium offered in each case, they reserve to themselves the right of awarding such other premium in lieu thereof as they may deem fit, or of withholding it altogether; and if the best essay or drawings should be by a candidate who has been successful on a former occasion, they reserve the power of adjudging such other reward as they may think fit, and of awarding the medals to the second in merit. The essays, and the illustrations, to which the Institute medals are awarded, become the property of the Institute, to be published by them if thought fit. In case the essays are not published within six months after the award of the medals, the authors will be at liberty to publish them. The drawings for the Soane Medallion will be returned to all the candidates, on application; to the unsuccessful after the adjudication, and to the successful after the presentation of the medal.

PROPOSED REMOVAL OF THE SOANE MUSEUM TO SOUTH KENSINGTON.

ON a motion, in the House of Lords, by the Duke of Buckingham, that Sir John Soane's Museum Bill be read a second time, Lord Overstone observed that the Bill was one which required the attention of the House. Its object was to enable the trustees of the museum to send a portion of its contents to the International Exhibition, and for a time to denude itself of those treasures. A like request was made to the trustees of the National Gallery, but was refused by them. He, therefore, could not see why it should be limited to one museum in particular if the principle were at all one of which they could approve. At present the Soane Museum could be seen without payment, but he need not tell their lordships that that would not be the case when removed to the Exhibition. He should not offer any opposition to the Bill, but it required serious consideration.

Earl Granville said he could well understand why the National Gallery had refused to lend its pictures; but the same principle did not apply in both cases. Last year only 2,000 persons visited the Soane Museum; but the number who would this year visit the picture gallery at South Kensington might be expected to amount to a couple of millions. He trusted that their lordships would assent to the Bill.

The Bill was then read a second time.

Really, it is to be hoped that the threatened removal will not be carried into effect; there can be no reason whatever, as we have previously shown, why all that we have of moveable art in London should be destined, sooner or later, to find its way to South Kensington. We wonder if the larger number of persons who, undoubtedly, will visit the collection if it really is taken to the Exhibition building, will hereafter be given as a potent reason for the final removal of the Museum?

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post*. Gold watches, 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enable persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

J. W. BENSON, 33 & 34, Ludgate-hill, 46 & 47, Cornhill, London, E.C. Established 1749.

CHURCH, CHAPEL, AND SCHOOL BUILDING.

Rochester.—St. Nicholas' Church.—The alterations and enlargement of the interior of this church, which have been in hand nearly twelve months, are now almost completed, and according to present arrangements the church will be opened on the 10th April. The interior of the edifice has undergone a complete change, the whole of the pews having been cleared away, and a gallery erected round the church. In order to open on to the western window, the organ has been removed to one of the side galleries.

Suffolk.—Alterations and additions are to be carried out in Ousden church, and tenders have been called for. Mr. Clark, of Newmarket, is the architect. The tower of Foxcote Church, near Sudbury, is to be taken down, and a new tower and spire, with several other works, are to be immediately proceeded with.

Cambridge.—The north wall and roof to the nave of Kirtling Church are about to be restored, also under the superintendence of Mr. J. P. Clark.

Kildare (Ireland).—A new Roman Catholic church is about to be erected at Broadford, in the county Kildare. Mr. Butler, of Dublin, is, we understand, to be the architect.

Taunton.—The Tower of St. Mary's Church.—The *Taunton Courier* says: It is with no small sense of pride and gratification that we note the rapid approach to completion of our beautiful tower. The great beauty of the work, as a whole, comes out more and more as every stone added brings it nearer to perfection; and from the astonishing effect produced by the one pinnacle which is already erected upon the entire design, we begin to see how great will be the difference when the other three are in their places. We are given to understand that there is a pretty certain prospect that by the month of August next we may see the tower of Taunton Saint Mary Magdalen complete in restored beauty. We may be pardoned for feeling a little exultation at the refutation of all the despondent prophecies which were uttered when first the sad work of demolition of the former tower was commenced: "Ah," said our discouraging friends, "You will never get the money to put up those pinnacles again, and if you do, where are you to get the man who is competent to restore them?" But now the thing is done; we have the money, and it is but paying to Mr. Davis his due meed of praise and congratulation, when we say that the exquisite piece of work which crowns the new tower is a standing assertion that in him has been found the right man to put the pinnacles in their right place. With regard to the funds, we are happy to be able to state, upon reliable authority, that if the last instalments of these premises subscriptions are promptly paid up, the churchwardens will have sufficient funds to meet all claims upon them, including the re-hanging of the bells and replacing of the clock and chimers. The *Courier* then calls attention to a proposal which has been made by the vicar, that the inhabitants of the county should be invited to join in placing in the new tower a memorial window to the late Prince Consort. We, says the writer, also find that a subscription has been set on foot for placing in the niches in the first story of the tower a set of statues, of the eleven Apostles. There can be no doubt that when the tower was originally built, there were statues in these niches, and Mr. G. G. Scott, the architect, who has throughout superintended the work of restoration, has given his decided opinion that the tower would be perfectly finished if this suggestion were carried out but as the statues were gone at the time of the proposed restoration, and the cost of reproducing them was not included in the estimate for the work, there are no funds available for the purpose.

Startforth Church.—A faculty has been obtained for the demolition of the church of the Holy Trinity, at Startforth. There was little in the old building worthy of preservation, and of that little all was in too dilapidated and perishable a condition to bear removal. It consisted of chancel, 30 feet by 12 feet, nave, 26 feet by 18 feet, with double bell-cot at the west end and south porch. The south entrance was the oldest portion, being of Norman character, having plain circular arch and cushioned caps, all thickly coated with whitewash. The west end was lighted with two single lights, and divided by a buttress in the centre, a mode of treatment of rare occurrence. The interior was rich in the possession of some of the most uncomfortable seats in existence, with bad accommodation for sixty or seventy persons. The pulpit nearly reached the height of the ceiling, with reading desk and clerk's desk to match. A font, of local marble, will be preserved, and elevated on a step in the new building. The new church is to be of much larger dimensions than the old one, and extend northwards and westwards over the present site. The chancel is to be 25 feet by 20 feet, nave 54 feet by 24 feet, and south porch 8 feet by 8 feet. The tower is 14 feet square and 90 feet high, with massive angle buttresses, and angle stair-turret to west gallery and heltry. Buttresses divide the nave into three bays, lighted by double lancets. Two lancets light the chancel on the south side, and a traceried window of three lights fills up the east gable. The roofs are high pitched, covered with green Westmoreland slates, and open in the interior to the ridge, having the main principals constructed of laminated arches, and the intermediate ones with cross-braces. The chancel roof is to be boarded on moulded ribs, and all the woodwork exposed to view will be stained and varnished. The exterior is to be built of snecked and squared rubble, from the Spital quarries, and the dressings to be of dressed stone. Messrs. R. and T. Borrowdale have contracted to do the work for the sum of £1,275, and to have the church ready for service by the 1st of December.

Durham.—St. Paul's Temporary Church, at Darlington.—The foundation stone of this structure was laid a few days since. The building will be 61 feet long by 33 feet wide, with a small chancel and vestry at the south end.

Kent.—The tower of Ilaves Church has recently been restored, from the plans of Mr. Scott, under whose direction the nave and chancel were restored, and a new north aisle added four years ago. The original dressings of fire-stone having decayed, the windows had been filled up, the stringcourses cut back to the wall, and the tower, inside and out, covered, with a coat of plaster, completely concealing its original features. This has all been stripped off, the windows, nine in number, have been re-opened, the decayed fire-stone dressings, quoins, and stringcourses being replaced with Bath stone, and the flint work well pointed. The old spire oak shingled about 15 feet high, built of the timber of the original spire, which was blown down in 1703, has been replaced by a new one, 30 feet high, the clock faces being placed in dormers in its base.

Exeter.—The Exeter Diocesan Board of Education have intimated their intention to erect a chapel adjoining their training college, under the superintendence of Mr. Hayward.

Oxfordshire.—New Wesleyan Chapel at Pillerton Priors.—A few days ago this chapel was opened for service. The edifice is stated to be "chaste in style—in fact, quite a model, both as to internal fittings and external appearance."

Clifton.—New Wesleyan Chapel.—A chapel is about to be erected in this suburb of Bristol, at a cost of over £6,000.

Lozells New Congregational Chapel.—The foundation-stone of the New Congregational Chapel at the Lozells was laid a few days since. The building will be in the Italian style, the dimensions being 80 feet long and 53 feet wide, and each end being circular. Entrance will be obtained by a portico in the main front, on either side of which will be the gallery stairs. There will be two galleries, one 10 feet and the other 22 feet above the chapel floor, both of which will be carried about three-fourths round the building. The fronts to the galleries will consist for about half their height of moulded boarding, the upper half being of open cast-iron work. The upper gallery will be supported by iron brackets. The ceiling is to be divided into panels, the centre ones of glass. In addition to the roof lights there will be a tier of windows over the upper gallery, and another tier below the lower gallery; and over the pulpit will be nine stained glass windows. The chapel is to accommodate 1,100 persons, and the cost of the building is estimated at about £3,000. The architects are Messrs. Poulton and Woodman, Reading; the local and superintending architect is Mr. F. D. Johnson, Bennett's-hill; and the builder, Mr. William Bennett, Lozells.

Abingdon.—The foundation-stone of a new Independent chapel was laid here a few days since. The total cost of the building will be about £2,000. The architect is Mr. J. S. Dodd, and the builders are Messrs. Winterborne and Bowles.

CAMBRIDGE ARCHITECTURAL SOCIETY.

THE third meeting of the Society for this term was held in the Philosophical Society's rooms, on Thursday evening last. The Rev. the PRESIDENT in the chair. The Society had invited any persons interested in the subject to hear Dr. Pierotti, architect to the Pasha of Jerusalem, on "The History of the Temple Enclosure."

The PRESIDENT having introduced him to the meeting, he spoke for a short time in French, and said that he had obtained the assistance of the Rev. G. Williams, of King's College, who had kindly undertaken to read a translation of his paper.

Mr. WILLIAMS then read the paper, which was illustrated by a plan of Jerusalem, some sections, and several photographs. The paper entered into all the discoveries of Dr. Pierotti about the enclosure, and explained the position of the ancient cisterns, drains, &c., connected with the Temple.

At the conclusion of the paper, Mr. WILLIAMS made a few remarks, showing how the schemes for the plan of ancient Jerusalem were affected by Dr. Pierotti's discoveries.

Reviews.

What is Good Iron, and how is it to be got? Murray, Albemarle-street, 1862.

UNDER the title of "What is Good Iron, and how is it to be got?" the anonymous writer of the pamphlet before us addresses himself to the consideration of a very important question. There can be no doubt as to the worthless character of a very large proportion of the iron used in engineering and mechanical works. The fact is too well known to be denied even by those interested in the production of a treacherous material on which daily depend the lives of thousands of human beings in every quarter of the globe. Cheapness is, no doubt, the root of the evil, and we can scarcely hope but that a cheap and bad article will for a long time compete successfully with a more costly but trustworthy material; and to such an extent has this obtained that, as the writer remarks—

The newspapers tell us of works retarded at the dockyards because the Admiralty cannot get the iron they require, and of angle bars rejected and returned on the hands of respectable firms, who cannot have wanted the will to satisfy their critical customers. Great railway companies have begun to make their own rails, because they despair of obtaining in any other way the requisite quality. And all this at a time when, for four years, the price of iron, good as well as bad, has been falling—or, in other words, the supply has constantly exceeded the demand! How comes it that the prodigious development of the iron trade has led to a state of confusion in which, as it would seem, good iron can neither be bought nor sold? It is the object of these pages to offer an explanation of this paradox.

From the very first the progress of the iron manufacture has shown itself only in the increased facility and diminished cost of production. In the quality of the produce there has been no improvement since, in days anterior to history, a small quantity of iron was extracted from the best ores, which alone were then available, by the rudest and most laborious process.

The great discovery of smelting iron by means of pit-coal effected a change in the manufacture which has assented to England the command of the markets of the world, but has lowered the quality of the iron. There are purposes which iron thus smelted will not serve, and accordingly a small quantity of iron smelted, as of old, with charcoal, is still made in this country, and further supplies are imported from Sweden.

In our own days the introduction of the "hot blast" has brought about a second revolution in the manufacture hardly less important than the first in its results, but unfortunately qualified with a larger alloy of evil. Between thirty and forty years ago, it was discovered that, by heating to a very high temperature the "blast" which maintains the combustion of the smelting furnace, a great saving in the quantity of the fuel might be effected. This led to the further discovery that not only might the coal be used in its raw state, by which the expense and the loss of coking were saved, but that coal which had hitherto been rejected for its noxious qualities might now be sent to the furnace; and subsequently, by the same means, even the intractable anthracite was pressed into the ironmaster's service. Hitherto only the superior argillaceous ores of the midland districts could be profitably converted into iron; but by the application of the hot blast the metal was extracted from every substance that contained it. The "black band," which had resisted all attempts to make it productive, became a mine of wealth to its possessors; and as the minerals of the Cleveland, Northamptonshire, and other districts were successively discovered, they were converted into cheap and serviceable, although inferior, iron. It was also found (and of all the benefits of the hot blast this is the most questionable) that the cinder or refuse of the puddling forge, hitherto of no value, would, when added to the materials of the hot-blast furnace, yield a larger percentage of iron, though of very inferior quality, and thus increase the bulk, though it damaged the character of the produce. The pig-iron thus made is always designated in the trade as "cinder-iron."

On the quality of pig iron, as the raw material of all the subsequent operations of the manufacture, the quality of all that is made from it depends:—

The annually increasing quantity of cheap pig-iron thus thrown into the market compelled the ironmasters who possessed the best minerals and the best fuel to reduce by every expedient their own cost of production; and gradually the pressure of competition

induced them to employ the hot-blast to a considerable extent. In many instances the exhaustion of the best materials has made this necessary. Where they have done this without unduly lowering the quality of the materials, the "hot-blast iron" so produced bears a very high character; but, unfortunately, many of them have availed themselves of the hot-blast to bring into use any materials which would enable them to compete in price with the makers of the cheapest iron, and thus the name of the district has ceased to be of itself a sufficient guarantee for the quality of its produce.

The application of this new agency to so many new materials had the effect of sending into the market, not only an increased quantity of iron, but a variety of quality such as hitherto had been unknown. At the head of the list stands the grey cold-blast iron. By untoward accident, or by want of care or skill, the produce of the cold-blast furnace may turn out mottled or white, and is then of inferior value. But the grey cold-blast iron by its name gives a guarantee for the quality of its materials, and is therefore divided by a strong line of demarcation from all "hot-blast" whatever; nevertheless, the difference between the cold-blast and the best "hot-blast" made from the clay iron-stones without any admixture of cinder is small in comparison with that which separates the best hot-blast from the worst. It might fill a volume to describe the various properties and uses of the various kinds of iron. It is sufficient to note that only two kinds, the cold-blast and the best hot-blast, will bear repeated "working" without losing their fibrous texture.

The author then points out how the first introduction of cheap iron for common purposes has resulted in its use in cases where superior metal only should be employed, and that in many cases the use of inferior metal is not attended with economical results:—

When rails were first manufactured for the newly-projected lines, they were made of a quality which might in some degree be expected to bear the friction and the momentum of the prodigious masses which were to be whirled over them. But the cost of such rails was considerable; their merit was not discernible by the eye. Directors were ignorant, engineers inexperienced. The present was all-important, and competition was hot. Inferior iron, and, worst of all, cinder-iron (the nature of which has been already explained) was employed almost of necessity, and all but universally. The consequence is, that the greater part of the lines need relaying years before such an expenditure ought to be required. Nor does the mischief stop here. What is to become of the prodigious mass of old rails? If the railway boards work them up again (and the temptation to do so is all but irresistible), they only repeat the error; or if a portion of these rails is sold as "scrap-iron," who is sanguine enough to hope that it will be purchased only for those purposes to which inferior iron can fitly be applied? There is no escaping from the consequences of the first fault, and these cinder-rails will long be banded about to burden the market and infect the manufacture of the country.

When iron merchant vessels first came into use their plates were made of the tough fibrous iron used for ordinary boiler-plates, and the result corresponded with the prudence of the design. The *Great Britain* stranded in Dandrum Bay, withstood for months the beating of a surf such as no floating work of man's hands had ever stood before, or ever will stand again, till shipbuilders change their present shortsighted policy. The success of the first iron boats was complete. Their cost was amply repaid by their durability and the cheapness of their repairs. "But could they not be made for less?" asked the Spirit of Gain. "No doubt they could," answered Competition. Other plates of inferior construction, to which the distinguishing name of "boat-plate" was given, were forthwith manufactured. A "boat-plate" may be had for from 20s. to 30s. per ton less than a "boiler-plate." The saving thus effected in so large an expenditure is trifling; the difference in security and durability is very great. Six Baltic steamers belonging to the port of Hull have been lost in scarcely more than a twelvemonth. How many more of these cheap iron vessels have left our shores and have never since been heard of? The increased rate of insurance on cheaply-built iron boats will give some measure of the additional risk occasioned by this ill-judged parsimony, and may, perhaps, weigh with those, if any such there be, to whom higher motives appeal in vain.

Through all these fluctuations, as might be anticipated, there is to be traced a steady decline in price.

In 1806, according to tables lately published at Liverpool, "merchant bars" (finished iron) made from cold-blast pig-iron (for none other was then known) were quoted at £17 10s. per ton. In 1861 the best make of Staffordshire had sunk to £7 10s., and Welsh bars might have been bought for even less than £5 15s. It is true the present is a time of unusual depression, but if we take the average price which finished iron must maintain, if it is to remain a staple manufacture of the country (about £8 per ton), even thus the reduction is prodigious; and if cheapness were the only measure of progress, the advance would be great indeed.

With regard to the manufacture, printed returns give us the following facts:—

In the year 1840 the total make of Great Britain is stated at what was then thought the marvellous amount of 1,396,000 tons. In 1860 it had risen to 4,156,000 tons, and to such an extent has the productive power of the country increased that to this prodigious total another million might on any sudden demand be added without any additional expenditure on buildings and machinery, or "plant," as such previous preparations are technically termed. It must also be noted that great skill has been acquired in the art of correcting the defects of the inferior kinds of iron by judicious mixtures, and thus giving them the highest quality of which they are susceptible. But these brilliant results are qualified by a fearful drawback. In the year 1840, the cold-blast iron amounted to 771,000 tons, or considerably more than half of the whole make. In 1860, it is a significant fact that the distinction between hot and cold blast is no longer noted in the returns; but of the aggregate make of 4,156,000 tons it is not possible to estimate the portion of cold-blast at more than the odd 156,000 tons. Those best acquainted with the trade agree that in the year 1860 there could scarcely have been more than thirty furnaces blown with cold-blast, and that the annual production of each of these cannot be rated at so high an average as 5,000 tons. Perfect accuracy cannot be attained, as perpetual changes are taking place in the ironmasters' arrangements, and little is known of the production of those pig-iron manufacturers who consume at their own forges the produce of their furnaces. But this calculation is sufficiently near the truth to justify the assertion that, while in twenty years the total make of the country has been trebled, the cold-blast has dwindled down to one-fifth of its former amount; and whereas in 1840 it constituted considerably more than one-half of the aggregate produce of the iron manufacture, in 1860 it has sunk down to about one-twentieth! Assuredly, if there was not a great redundancy of cold-blast pig-iron in the year 1840, there must have been a great deficiency of it in the year 1860!

As to the use of scrap-iron, the author says—

If scrap-iron is employed to any extent, it is hard to say what precautions would suffice to prevent the use of the improper kinds. The supply of best scrap-iron is altogether insufficient to meet a large demand. Old rails—which are almost universally made of cinder-iron—may be had at 20s. less than the best scrap-iron, and 40s. or 45s. less than puddled bars. Cinder-iron is an element of weakness wherever it is introduced. It is not turned into good iron by being broken small, and it is only made worse by further working.

The questions what is good iron, and how is it to be got, are of some moment at the present time, and the writer of the pages from which, looking to the importance of the subject, we have largely drawn, if he has not solved them, has, at least, gone a good way towards divesting the question of some of the obscurity through which it has hitherto been viewed by the public.

WE have also received Mitchell's *Screw Piles and Moorings*; Chambers' *Social Science Tract on Building Societies*. Of Becton's publications—*Home Pets*; the *Boy's Own Magazine*; the *Englishwoman's Domestic Magazine*; the *Boy's Own Library*; the *Illustrated Family Bible*; the excellent and complete *Book of Garden Management*; and the *Dictionary of Science, Art, and Literature*, which deserves more than a passing notice at our

hands. *The Coming Struggle among Commercial Travellers Relative to Usages and Club Houses*. A good idea forcibly insisted on by Mr. Kibbler Webb *On Iron Breakwaters and Piers*. *The Electrician*; a well-conducted Journal, devoted to the interests of a still progressing science. *The Dublin Builder*; *Practical Mechanics Journal*; *Beamish's Life of Sir I. K. Brunel*; and the *Life of Sir S. Benthall*, by Mrs. BENTHAM. To some of these we must return.

Correspondence.

THE ROYAL ENGINEERS.

SIR,—Having disposed of that part of the "Colburn's" scheme which relates to officers, I will now endeavour to say something about the non-commissioned officers and men.

I have often wondered whether contempt or pity has been more generally felt by the profession for those who, in their struggles for fictitious fame and notoriety, have been compelled to hold up to ridicule the rank and file of their own corps, by saying of them what cannot be substantiated, and that bears on its face the impress of farfetchedness and subtlety. *The Times* and *Daily Telegraph* especially are well primed with puffs and statements, as worthy of credence as the loquacious hyperbole and verbose selling speeches of a Cheap Jack at a country fair, and that are given out with the same end in view, viz., to mislead the ignorant and careless. I will only mention two such puffs: "This corps is composed exclusively of architects, surveyors, and mechanics," and "A few architects and surveyors will be taken."

I happen to know something about the corps, and I say that there is not a single architect in it—whether officer, or in the rank and file; a few land surveyors there are in the survey companies, who have served their pupillage, such as it is, on the Ordnance survey, at the public expense; and as to mechanics or tradesmen, I would ask what proportion they bear to the miners or tradesmen in name only, or of no trade at all? Every civil officer in the department that I have been enabled to consult—and they are not a few, and are the persons who can give an opinion, for "Engineer officers know nothing of work or workmen, how should they?"—has stated that the proportion of tradesmen of the building trades does not average 10 per cent., and that even these are generally very inferior tradesmen. This is but natural; why should good workmen enlist for soldiers? Patriotism is all very well in its way, but it will not tempt good tradesmen to barter away freedom from restraint in exchange for a soldier's jacket; this is the rule, to which there are exceptions as a matter of course; but, as a rule, the tradesmen in the corps of Royal Engineers are such in name only—runaway apprentices, idlers, &c.; the exceptions being in the case of those who have felt it best for their interests to be *non est* for a time till something or other has blown over, or those who enlist through drink, and remain soldiers on the same account. It would be very strange, indeed, if out of upwards of 4,000 men we did not find a tradesman or two. There are some very smart sergeants and corporals in the corps, but to find a good tradesman of a building trade (and it is with that class or description of trade that we have to do), either one or the other, is an exceptional occurrence. I remarked this to many engineer officers, and have invariably received as a reply—"That good tradesmen make the worst soldiers, and rarely become non-commissioned officers, but generally defaulters."

If the article in *Colburn's* means anything, it means that all men in the corps are building tradesmen—that there are no tailors, shoemakers, labourers, collar makers, &c., &c. I suppose the writer of it, with his small stock of information on anything connected with work or workmen, considered that a sapper should be understood, in the common vernacular, to be a man who can build a house; that the tradesmen (sappers) took turn and turn about in attending on each other, carrying bricks or mortar, or excavating foundations on one day, and making doors, slating a roof, or painting or paper-hanging the next. Oh, blissful ignorance! "Ex nihilo nihil fit."

Our friend goes into many items, and proves that a sapper costs £76 10s. 5d. per annum, or 4s. 10d. daily; he has, however, forgotten (?) to include any house rent, or a proportion of the cost of making him a soldier; his allowance for tools is also about one-fourth of what it should be. It also strikes me as rather strange, that whilst all soldiers are supposed to undergo a fixed period of rifle drill annually (I believe a month is the time), the Royal Engineers have none, except what they can learn in half a day per week, or twenty-six days per year; this, probably accounts for the omission in the cost of a sapper of an item for rifle instruction.

I have not the time, nor have I the inclination, to check in detail what is given us; I will therefore take as correct each of the various items, to which must be added 5 per cent. on 150, which would be about the average at home and abroad, for providing a sapper with quarters and all the necessary adjuncts, such as canteens, churches, hospitals, wash-houses, lavatories, ball-courts, &c., &c.—to say nothing about keeping them in repair when built—or £7 10s. per annum for house rent. Then, omitting altogether the interest on the amount, there is £100 always considered as the expense of making a man a soldier, which, considering that most soldiers enlist for ten years only, is £10 per annum. Then 30s. must be added to the item for tools, which is little enough, considering the waste and destruction of them. These amounts, added to £76 10s. 5d., give, in round numbers, £95 per annum as the average cost of a sapper, tradesman or labourer, good or bad, and exclusive of cost of officers, and of their accommodation, or a daily rate of 6s. 10d.

I believe that Weale's Price Book is arranged to give a builder 20 per cent. profit on day labour, on account of the losses incidental to day-work, and that the prices there quoted for labour are one-fifth above London prices as paid to workmen. There are very few sappers employed in London, except those that were sent to the Exhibition "to upspack goods," the impropriety of which is very glaring, because 3s. per day will procure the sort of men required; additional employment would also be afforded to some labourers, and also to a few extra policemen.

In making a comparison of civil labour, we must first consider the stations where sappers are kept, and what are the rates there for civil labour; also take an equal number of civil tradesmen to compare with those in the corps.

I find that the average rate paid to mechanics is 4s. 6d., and labourers 2s. 6d.; excluding London and some of the principal towns, where sappers are seldom seen, and, for argument's sake, I will assume that 20 per cent. of the corps are tradesmen of building trades, and good tradesmen, and only 80 per cent. who are tradesmen in name only, or who call themselves labourers:—

100 sappers, whether tradesmen or labourers, at £95 per annum	£9,500 0 0
20 civilian tradesmen, at £75 10s 6 per annum	£1,408 10 0
80 labourers	3,130 0 0
	4,538 0 0

Saving by employing civilians

But, "to soar in the regions of fancy," I will assume every sapper to be a good tradesman—

100 will cost	£9,500 0 0
100 civil tradesmen	7,042 10 0

Even by this assumption the civil labour is cheapest by

I have said nothing about waste of materials, which is not an inconsiderable item in military labour.

The article in *Colburn's* proposes to add 5,849 rank and file to the corps of Royal Engineers, which gives us the rule-of-three sum—If 100 cause a loss of £4,962, what will be the loss on 5,849? Answer, £290,227 7s. 7d.; having obtained which amount, I am led to ask, what has been the annual loss on the present numbers, and what it would be if the scheme were carried out. I therefore fall back on the rule of three—As 100 : 4,962 :: 4,351 : £290,227 12s. 4d., as the present annual loss; and if the proposed addition were made to the present strength, the total annual loss would be £496,200.

To put against this I may be told that sappers are soldiers, and that this amount is not altogether lost. Admitted. But what does an infantry soldier cost? Not so much as a

sapper by "cost of engineer establishment at Chatham." The amount of "working pay," the cost for "tools," a proportion of "regimental pay," and many other items, or generally as about two to three. Then, if sappers become efficient soldiers in twenty-six days per annum (less than the period required for rifle instruction, &c., in the line), is there any necessity for a standing army? If twenty-six days per annum, at "half a day per week" will make a soldier, or, rather, keep him as such, about a fortnight of continuous drill would make any number of them; but, if we take sappers to be no more efficient than line soldiers, why are we to keep 10,000 sappers when we might for their cost keep 15,000 line soldiers, and still be money in pocket? The case, therefore, stands thus: sappers cost more than civilians as workmen, without a tithe of their efficiency; and they cost more than soldiers, with the same drawback, so that, whether as workmen or soldiers, they are dear bargains. (I may here mention that I have made no allowance for what it would cost to educate the sappers as proposed, the cost of workshops, &c., &c., or the extra pay that would have to be given, supposing the class of men were obtained.)

If I am told that sappers are invaluable in the field on account of their knowledge of sapping, mining, throwing up entrenched earthworks, and so on, I ask how do they acquire this knowledge? Is it learnt in the "half day per week?" If so, line soldiers can all be made equally competent, without distressing themselves or neglecting any portion of the other military duties, and the corps of sappers can be dispensed with.

With such proofs, I can safely ask if the whole system is not a deception from top to bottom, kept up for purposes other than the interests of the country? I am firmly convinced and fortified in that conviction by the opinions of many eminent military officers, that as the competency of the majority of line officers in military engineering is equal, if not superior, to that possessed by engineer officers—if there were a few sergeant instructors attached to each regiment, say one per company, for instructing the troops in sapping, mining, &c., on the same principle as musketry instructors, more satisfactory results would be obtained than is derived from the present expensive, deceptive, and antiquated system.

I have lately seen frequent mention made of a model of the Preston Barracks, which is being prepared at Chatham by sappers, for the Exhibition, under the direction of Lieutenant-Colonel Collinson, R.E. (it is excusable that so many notices of this model should be published, considering that it is made for notoriety, as something that the corps has done). I wonder how many companies have been picked to find men fit for the work; why the Secretary of State sanctions such expenditure as will have incurred in its preparation? What the real expense will be? Not a *make-up* account, but a real bill of costs, everything included. I should also like to know if justice will be done to the Clerk of Works, who designed these barracks and who superintended their erection, by having his name mentioned in connection with the model? Let us have no deception in this affair or it will be exposed. But to return from this digression, I trust that I have made out a clear case why the scheme as proposed by an "officer of high rank in the corps" in *Coburn's United Service Magazine* of January last should not be introduced. I have proved that engineer officers would cost about £1,000 each to bring them to the proposed standard, and that then they would be but little better than they now are, whereas competent men could be obtained without "educating and maintaining them at enormous expense to the public." I have also proved that sappers cost more than double what civilian workmen in equal numbers would cost, and without their efficiency. I have also proved that sappers are more expensive than line soldiers in the proportion of three to two, and I leave your readers to draw their own conclusions therefrom.

I might, if so disposed, go through that article from beginning to end, and hold it and its writer up to public ridicule, and fight him with his own weapons, one of which would be his main-spring *day-work*, which by every practical man is admitted to be the most unprofitable of all systems, and never to be resorted to if it can be avoided. But I refrain, and leave him to his own reflections, merely giving him a little parting advice, *ne sutor ultra crepidam*, so that whenever he again ventures on proposing any scheme to the public, he should select a subject with which he may have some acquaintance, and display it, and not occupy so much space with a proposition so ridiculous and absurd as that of executing the works and buildings required by the War Department by engineer officers and sappers, without clerks of works or other civil professional gentlemen—by a system of day work, or a "self-supporting scheme," which proposition, literally interpreted, means asking the country for a further trial in deception still more deceptive, to break down more completely than has the present system, because on a more gigantic scale, and without the counterbalancing influence of the life of the department—the civil professional officers.

In conclusion, I have only to express my acknowledgments of your kindness in publishing my views on a mad scheme, which I hope have imparted some little information to yourself and the numerous readers of the BUILDING NEWS.

PETARD.

17th March, 1862.

THE ALBERT OBELISK.

SIR,—The BUILDING NEWS has generally shown itself willing to admit a defence of opinions contrary to those which it itself has advocated. I beg, therefore, for permission to advance, as briefly as I can, one or two reasons why it seems to me that, notwithstanding what is urged in your Number for the 21st March, the Albert monument, if an obelisk, must be monolithic.

To possess true monumental character any object must show two characteristics; first, it must be as enduring as possible; secondly, it must show a desire to honour, in the best possible way, the memory of the person commemorated, or, in other words, must show marks of sacrifice.

I need not waste words by attempting to prove the first part of my proposition. "Monumental" is more frequently used to express the enduring and unmovable nature of a structure than to express that it is commemorative. Nor is it necessary, I think, to occupy your space by an attempt to prove that an obelisk built of masonry will really be somewhat less durable than a monolith, and will apparently be infinitely less so.

I think the second characteristic will be granted after a little thought as to be also one properly belonging to a monument. I believe in direct proportion to the evidence of sacrifice on the part of those raising the monument is the monumental character obtained. I say sacrifice, and not ostentation; and this distinction it is which makes the use of the most precious or most noble material and structure obtainable with the means in hand not only appropriate but indispensable for a monument.

Now, unquestionably, the most noble characteristic of an obelisk is its monolithic character, and this nobility can no more be approached by a built obelisk than the value of a priceless gem can be conferred upon a paste copy. The difference between the two is the same in its nature as that between a plastic cast and a marble statue, between Portland stone and Portland cement, between broad cloth and shoddy; you have the same form, but not the same value.

Now, if it really turns out upon counting the cost that we cannot raise enough to pay for quarrying and transporting a monolith of one hundred feet, let us have one of fifty, or twenty, or of as many feet as we can pay for. Let us not, however, prefer ostentation to sacrifice, and instead of erecting the largest perfect obelisk which our means permit, construct a full size model of the obelisk we should have liked to put up, but couldn't, and then call that honouring the memory of the Prince.

T. ROGER SMITH.

A NEW PUBLIC PLAYGROUND FOR LIVERPOOL.—A new playground for the public, given by the Earl of Sefton, and fitted with a gymnasium, has been opened at Liverpool. The inaugural proceedings in connection with the ground excited a good deal of interest; the Mayor, Mr. R. Hutchison, presided; and most of the leading and influential gentlemen of the district attended. Mr. Melly, in the course of an address, said, "All playgrounds are only experiments for the time being, and on the experiment now being made in Liverpool depends the success of the playgrounds all over England."

IMPROVEMENTS IN BUILDING, &c.

SMOKE-CONSUMING APPARATUS.—Dated August 9, 1861.—L. Vassiere.

The position of this apparatus is on the furnace under the boiler (where furnaces and boilers are used) and forward of the furnace bars. The smoke should be made to pass this apparatus at its lower part, it then ascends into small round holes made quite through the thickness of the inferior plate; from thence the smoke passes through a nipple, round which circulates heated air, which, meeting at the summit of the nipple, the smoke mixes therewith, and furnishes the latter with the oxygen required to establish combustion. This mixture traverses an upper plate (which is placed on the hollow nipple to receive its tube); this is also provided with a round hole; between this upper plate and the nipple a space of about the eighth of an inch is left to let the heated air pass to supply the required oxygen and establish combustion of the smoke, which operation takes place immediately above the space mentioned and in the hole of the upper plate, which is sufficiently heated to insure the inflammation of the mixture.

IMPROVEMENTS IN STOVES.—J. Billing.

The patentee claims,—1. The construction of stoves wherein the smoke from the fire-box is caused to pass horizontally through an opening in the back of the stove into a central back flue, in which it descends, and then passes into two side flues, whence it ascends into the chimney as described. 2. The construction of stoves having ascending and descending back flues, or simply one ascending back flue and a sliding valve to regulate the opening into the same, in combination with a throat valve, or throat valves, and wherein the opening and closing of the throat valve, or valves, and of the sliding valve regulating the opening into the back flue, or flues, is effected by means of one and the same screw spindle and levers, as described. 3. The application of a rising and falling blower to stoves actuated by an escutcheon, or a rose, in conjunction with the knob that regulates the opening and closing of the valve, or valves, as described. 4. The construction of stoves wherein a second moveable grating is placed beneath, and is fitted in between the bars of the ordinary grating, for regulating the draught and clearing the bottom of the fire as described. 5. The construction of stoves provided with a back draught wherein a fire-brick or metal back is employed, having a number of vertical, or nearly vertical channels, through which air is made to pass, as described.

VENTILATING APPARATUS.—W. Wilds.

This apparatus consists of a box, or case, the bottom of which is formed of woven wire, or perforated metal, and at top are fitted flaps, or lids, by which it is opened and closed, and which are connected by cords, chains, or like agents, passing over pulleys to a suspended balance weight. The patentee prefers, when he uses two flaps, or lids, to hinge, or joint them to a rail, bar, or stile fixed across the box, and to support the pulleys over which pass the chain, or cords which are fastened to the flaps in standards fixed upon the rail, bar, or stile, and to connect these chains, or cords to a chain or cord, by which the balance weight is suspended. The apparatus is fixed at the ceiling, or the roof of the room, or place to be ventilated, in such manner that air may pass through it when open, or from, such room, or place, communication being provided between it and the atmosphere, which may be conveniently done, when the ventilator opens under another floor, by providing a grating, air-brick, or opening at one or both ends of the air trunk formed between the joists. By the balance weights the flaps or lids may be completely closed, or may be opened more or less to admit and regulate the passage of air through the bottom of the box to or from the room or place to be ventilated.

CONSTRUCTION OF BUILDINGS SO AS TO UTILISE THE WASTE HEAT PASSING UP THE CHIMNEYS.—W. Clark.

This invention relates to an improved arrangement of the flues of the several fireplaces of a house or other building which are all made to unite in a chamber placed under the roof, and furnished with an opening for the escape of the smoke. This chamber is made incombustible, that is, the materials of which it is composed consist of bricks or stones for the sides, and iron for the bottom; a door is placed for affording access to this chamber, which is also of iron; the aperture for the escape of the smoke may be varied in size, according to the number of flues opening into the chamber. This aperture may also be furnished with a smoke distributor. Water cisterns may be placed in this chamber with a float open to the exterior serving for various domestic purposes, such as baths, water-heating apparatus, or other uses. Air reservoirs may also be employed with this smoke chamber, the air of which, being heated therein, is conducted thence for the purpose of heating apartments.

MACHINERY FOR CUTTING, SAWING, AND SLICING, OR PLANING WOOD AND OTHER SUBSTANCES.—P. Walters.

Here, on a strong framework of wood or iron, fixed or mounted on standards, a bed-plate is arranged, on which a slide, having suitable grooves to correspond with the bed-plate, is caused to move with a reciprocating motion by a connecting rod attached to the crank of a driving axle. The wood or other material to be operated upon is attached to the upper surface of the slide, above which a suitable plane, saw, or other cutting or slicing apparatus is secured by standards, bolted to the framework. By these arrangements, at each revolution of the crank a slice of wood or other substance is taken off of the desired thickness, and the cutter may be so regulated as to shave or slice the wood of such thickness that it will curl or roll up, and form spills, or a thicker slice may be obtained for many purposes.

CONSERVATORIES, ORCHARD HOUSES, AND OTHER HORTICULTURAL ERECTIONS.—J. Cranston.

This invention applies to horticultural buildings to be constructed of wood and glass, and also to erections for any other purposes in which the same principle of construction is carried out, but with the use of iron, zinc, copper, tin, lead, or other suitable material. In the place of glass, all the buildings being planned and screwed together, and made to rest upon blocks of wood or butts of trees sunk in the ground, so that they can be erected with great ease, and are portable. For horticultural buildings the space to be covered is to be divided crossways by principals formed to the shape required, and of any ordinary kind. Upon the backs or outer surfaces of the principals pieces of timber are fixed edgewise to run horizontally from end to end of the buildings, and at any distances apart that may suit the lengths of the glass to be used in the roof. These timbers have been called "radial pieces," and to them grooved rafters are secured, the top end of each rafter to the bottom edge of the "radial piece" and the other end of each rafter to the top edge of the radial piece, and so on throughout the roof, dividing it into planes, the one plane rising above the other as much as the radial pieces are deep. Sheets of glass are fitted into the rafters, sliding into the grooves, where they are held by turn buttons screwed to the ends of the rafters, the turn buttons being long enough, when in horizontal positions, to catch and bear up the glass on each side of the rafters, and when turned to vertical positions they are sufficiently narrow in width to allow of the panes of glass being pulled out. The radial pieces have circles, trefoils, quatrefoils, or small openings of any shape pierced through them at equal or unequal distances, either all along or partly along their lengths, for the ventilation of the buildings, the insides of the radial pieces so pierced having valvular slides with friction rollers at the edges made to run in grooves, so that the ingress and egress of air is always under control, insuring perfect ventilation by numberless small openings in horizontal rows throughout the whole roof surface. The outlines of buildings so constructed can be varied to any extent by making the principals upon which the radial pieces rest either straight, canted, arched, or curved.

APPARATUS FOR DRILLING AND TAPING GAS AND WATER MAINS AND PIPES, AND IN PREVENTING LEAKAGE THEREFROM.—J. Somerville.

According to this invention the patentee proposes to employ a peculiar apparatus, consisting of a bow or breech pipe or bracket, secured to the main or pipe to be drilled by clips or straps, and having fitted to it at its centre, or in any other convenient position, a set screw, for the purpose of applying pressure to a combined drill and tap of a peculiar construction, which is actuated by an ordinary ratchet or other suitable contrivance. Immediately above, and attached to, or forming part of, the drill or boring bit, there is a cylindrical piece of metal, of the same diameter as the hole made by the drill, its object

being to keep the drill steady after it has entered the main, and prevent it from breaking through too soon, or until the whole is ready to receive the tap; it also serves to plug the hole whilst the drill is breaking through, and so prevents the escape of gas or water at that time. The tap is formed on the upper part of the stem of the drill, immediately above the cylindrical part hereinbefore referred to, and has two or more annular grooves or recesses made round it at proper intervals, into each of which is fitted a circular washer or collar of indiarubber, leather, or other suitable material. These washers or collars should be made of slightly larger diameter than the hole to be tapped, so that, as the tap penetrates into the main, and the washers or collars successively enter the hole, they will effectually plug the same, and prevent any escape of gas or water through the longitudinal grooves or slots made in the tap. The intervals or spaces between the washers or collars should not be less than the thickness of the metal being tapped, so that there may be always at least one of such washers or collars in the hole. When the screw thread is sufficiently cut the tap is removed, and the service pipe is inserted in the usual manner.

DECISIONS IN THE COURTS.

IMPLIED COVENANT IN AGREEMENT FOR LEASE AS TO GOOD TENANTABLE REPAIR.

Tildesley v. Clarkson.—*Rolls Court.*—This case was a bill filed for the specific performance of an agreement to take a house in Clifton-gardens, Maida-hill. The agreement was dated in July, 1860, and shortly after taking possession, the defendant (the lessee) discovered that the house was not in such a state of repair as he was of opinion it should be. The plaintiff declining to do the repairs insisted on, the defendant refused to execute the lease, and in February, 1861, quitted possession of the house.

The Master of the Rolls, in giving judgment, said, the question before the Court was whether the house was handed over by the plaintiff to the defendant in such a state of repair as a house of this particular class ought to be. There was no fraud or wilful misrepresentation on either side, the plaintiff evidently believing that the house was in a proper state of repair, and the defendant being convinced it was not. With respect to such an agreement as the one in question, there was no doubt an implied covenant that the house to be let should be in good tenantable repair, and if the lessor did not deliver it in such repair over to the lessee, the latter would not have the retention of it forced upon him. In the present case, if the evidence rested alone upon the affidavits, the Court would have the greatest difficulty in deciding between the parties. But the plaintiff had thought proper to have the defendant and his wife examined *vide roe* in open court, and the result of their evidence, taken in conjunction with that of two most respectable architects and a surveyor, led the Court to hesitate before forcing such a house upon the defendant. As the affidavits, however, were so conflicting, and the impression on the minds of both the plaintiff and defendant so manifestly sincere, the court had determined to see the house and judge for itself. Accordingly he (the Master of the Rolls) had secured the attendance of Mr. Graham (a foreman at Cubitt's) to assist him in forming an opinion on the matter, he having reason to put every confidence in the practical experience of that gentleman. In company with Mr. Graham, he had gone over the house in Clifton-gardens, and from his own observation, supported and in many respects materially assisted by the practical experience of that gentleman, he had come to the conclusion that the house was not in such a state of repair as a house of that class ought to be under such a lease as the one granted. There was nothing to be said against the house generally as a good and solid structure; but the repairs which the defendant would have to make in order to put and sustain it in such a state as it ought to have been when possession was given to him under the lease, would amount to so large a sum that it would be most unjust to hold that it was in such a proper state of repair as would entitle the plaintiff to insist on specific performance of the lease he had granted, and which the defendant repudiated. The result was that the Court would not consent to force the house on the defendant, and the plaintiff's bill must stand dismissed.

LIABILITY OF CONTRACTORS UNDER THE METROPOLITAN BOARD OF WORKS.

Clothier v. Webster.—This was an action, at Maidstone, by a baker, at Woolwich, against a contractor, under the Metropolitan Board of Works, for injury caused to the plaintiff's oven, through the negligence of the defendant in executing certain works for the Board.

The defendant had, in making the sewer, made an excavation under the oven, which had afterwards sunk, so as to require it to be rebuilt, by reason of which the plaintiff was put to expense, and for some weeks disturbed his business, for which he claimed between £30 and £40.

The case for the plaintiff was, that this was caused by the mode of making the excavation, which was denied on the part of the defendant. The evidence on that point was contradictory, and witnesses were called on the part of the defendant to show that every proper precaution had been taken.

Mr. M. Chambers, on behalf of the defendant, submitted that the works had been done in execution of the powers of the Act, and that, therefore, the only remedy of the plaintiff was by a proceeding for compensation under the Act.

The Lord Chief Justice said: That is so, no doubt, except so far as concerned any negligence in the manner of doing the work, for which the contractor would be responsible.

The excavation was made beneath the oven to effect a communication with the main sewer at some distance below. The contract provided for concrete when required by the engineer of the Board, and (in the usual way) specified that all works should be well done, &c., and concrete had been put in so far as required by him, and, as he said, so far as was necessary. There was concrete, however, only as far as the crown of the sewer below, and the space above it, up to the oven, was filled up with chalk and clay, the oven being supported upon it by wooden struts or beams.

Mr. Chambers, in summing up for the defendant, contended that as the contract required concrete only under the orders of the clerk of the works or engineer—who were employed by the Board, and as they were satisfied with what the defendant had done, the maxim of law *respondent superior* applied, and that the Board alone were liable.

The Lord Chief Justice said, he should rule otherwise, reserving the point.

Mr. Chambers then contended, on the evidence for the defendant, that, even assuming that he might in law be liable, he was not liable in fact, for that every possible care had been taken, and the chalk was rammed as closely as it could be.

Mr. Hawkins, in reply on the part of the plaintiff, contended that the ramming down had been badly done, and that for this the contractor was responsible. The oven had gone down, and that was the best proof that the work had not been sufficient. Of course, the people who had done the work would say they had done it well; but the result was the best test, and as the ground gave way, it could not have been well filled in.

The Lord Chief Justice, in summing up the case to the jury, told them that if the contractor had been wanting in due care and skill, he, and not the Board, would be responsible. The great question was whether the excavation had been well filled in. And the point was very pertinent, how, if it was so, the ground came to give way? It was for the jury to say whether, upon the whole of the evidence, there had been a want of reasonable care or skill in the filling up of the excavation? If so, the plaintiff was entitled to a verdict; if otherwise, he was not.

The jury consulted for a few minutes and returned a verdict for the plaintiff.—Damages, £35.

OLD YORK HOUSE.—A few weeks ago inquiry was made as to the existence of any drawing of Old York House—the most famous of all the old London mansions on the river. We are glad to say that hints for a representation of that house in which Charles Brandon and the "Pearl of England" lived, in which Lord Bacon was born, in which Ellesmere died, have been discovered in the drawings of Wyn Graede at the Bodleian. By help of Mr. Cox, the librarian, Mr. E. M. Wurd, R.A., has succeeded in making from Wyn Graede's hints a slight but pretty and spirited sketch of that historical pile which Buckingham pulled down in order to clear the site for Inigo Jones.—*Athenæum*.

TENDERS.

CHAPEL, PRESTON.

For the erection of Moor Park Wesleyan Chapel, Preston. Poulton and Woodman, architects, Reading.

Tomlinson	£3,509	Todd (accepted)	£3,269
Bamber	3,297		

COTTAGE.

For building labourer's cottage and other works, for C. Cannon, Esq. Mr. Henry McCalla, architect.

Mr. Porter (Bunhill-row)

SCHOOLS, ASHTON-UNDER-LYNE.

For the erection of St. Michael's Parish Schools, Ashton-under-Lyne. Hayley and Son, architects, Manchester. Quantities supplied.

Thomas Clay	£3,187	Stores	£2,774
J. and J. Longson	2,993	Terras	2,631
Thackrah and Pearce	2,889	J. Robinson, Jun.	2,425
W. H. Brown	2,760	H. and S. Warburton (accepted)	2,345

ALTERATIONS, CHAMPION-HILL.

For alterations to house, Champion-hill, for R. G. Cooper, Esq. Mr. W. Lee, architect. Coils and Co. £2,340 Newman and Mann

Fish	1,987	Beeton	1,761
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TAVERN, SHOREDITCH.

For rebuilding the Griffin Tavern, Leonard-street, Shoreditch, for Mr. George Heaverman. Mr. William Lee, architect. The tender of Mr. Green has been accepted.

SHOPS, &c., HACKNEY.

For house, shop, show-rooms, &c., Church-street, Hackney, for T. Wilkinson, Esq. Mr. William Lee, architect. Mr. Beeton's tender has been accepted.

ROADWORK, HEREFORD.

For the formation and metalling of a portion of the proposed new roads on the Hampton Park Estate, Hereford. Messrs. Elmslie, Franey, and Haddon, architects.

W. Birchley	£642 17 8	C. Walford	£433 11 6
J. Trumper	473 11 0	W. Scandrett (accepted)	381 18 0

DWELLING HOUSE, ESSEX.

For a house at Witham, Essex, for Charles Page, Esq. Mr. Fred. Chancellor, architect, 13, Pinner's Hall, Old Broad-street, London, and Chelmsford, Essex.

Gardener	£667	Glasscock	£660
Brown	665	Sanders (accepted)	600

SEWER, DUMFRIES (N.B.)

For a main sewer to be constructed in the White Sands, Dumfries.

Murphy and Son	£695 0 0	Allan and Man	£460 17 0
Tough	601 5 11	McCalley	434 17 0
Aitchison	498 0 0	Maxwell (accepted)	409 10 0

VILLA, &c., LEICESTER.

For [the erection of a villa and outbuildings at Great Wigston, near Leicester, for Thomas Ingram, Esq. Quantities supplied by the architect, William Millican, Hotel-street, Leicester.

Tender No. 1.—Brick and Stone Walling.

*Messrs. Osborne	£1,839	Thompson	£1,217
*Neale	1,989	Hickman	1,150
Porter	1,258	Dawkins	1,110
Duxbury	1,236	Hutchinson	1,110
Wykes	1,220	Cox	1,092

Tender No. 2.—Carpenter and Joiner.

Wykes	£798 0	Smith	£711 0
Jarrom	757 0	Clifton	689 0
Coltman	749 14	Porter	678 18
Sharpe	749 10		

Tender No. 3.—Stone Mason.

Johnson	£87	Fern	£65
Yates	85		

Tender No. 4.—Plumber and Glazier.

Adlard	£155	Norman	£144
Whitmore	147	Pozzard	139

Tender No. 5.—Ironwork.

Pegg	£45	Sharman	£38
Law	44		

Tender No. 6.—Painter.

King

* Including No. 2.

ARBORETUM, WORCESTER.

For the erection of a pavilion in the pleasure grounds, Worcester. Mr. Cranston, architect, Birmingham.

W. Wythes	£899 0 0	W. A. Showell	£740 0 0
J. Hardwicke and Son	855 0 0	G. Arden	725 10 0
T. Edmonds	753 19 0	W. Easie and Co. (accepted)	694 10 0

Architects competing for the above were limited to an expenditure of £300.

COMPETITIONS OPEN.

INFIRMARY.

LONDON.—The managers of the Central London District School desire to have designs for a detached infirmary for their boys' and girls' schools at Cuckoo Farm, Hanwell. The building must be of a simple and inexpensive character, in harmony with the existing buildings, and comprise accommodation as required by the Poor Law Board for 180 boys and 180 girls, each sex to be separately distributed in six rooms. There must also be a kitchen, surgery, waiting-room, and other necessary offices underneath. Particulars on application to the superintendent at the schools. The plans must be drawn to a uniform scale of 8 feet to an inch, each to be accompanied by a specification of the works and an estimate of their cost. No premium will be given, but the architect whose plan is chosen will be paid by commission for supervision, &c., of erection of the building in the usual way. Each set of plans must be subscribed with a motto, and forwarded with a sealed letter, containing the motto and the author's name, to Samuel Heath, Jun. clerk to the Board, No. 10, Basinghall-street, E.C., on or before April 2.

CONTRACTS OPEN.

BANKS.

Bucks.—For the erection of new bank premises, at Aylesbury, Bucks, for the directors of the London and County Bank. Plans and specifications at the London and County Bank, Aylesbury, and with Frederick Chancellor, architect, 10, Pinner's Hall, Old Broad-street, London, and Chelmsford, Essex. Quantities will be supplied. Tenders to be delivered on the 3rd April.

IRELAND.—For erecting a branch bank and manager's residence at Nenagh, co. Tipperary, or the Provincial Bank of Ireland. Plans, &c., at the office of the architect, W. G.

Murray, 68, Lower Gardiner-street, Dublin, up to the 31st inst. on which day estimates are to be forwarded addressed to Thomas Hewat, Esq., Provincial Bank of Ireland, 42, Old Broad-street, London, E.C.

TOWN HALL.

TIVERTON.—For the erection of the new Town-hall, &c., for the Borough of Tiverton. Plans, &c., at the town clerk's office, Peter-street, Tiverton. Sealed tenders endorsed "Tiverton New Town Hall" to be delivered at the town clerk's office, on or before the 2nd of April. Bills of quantities will be supplied by the architect, Mr. H. Lloyd, Tark-street, Bristol.

TODMORDEN.—For arching over the river, and other works in connection with the foundation of the proposed town-hall. Plans, &c., at the office of Mr. Allen, Oddfellows-hall, Todmorden. Sealed tenders, endorsed "Tenders for Town-hall, Todmorden," to be forwarded to Mr. J. Green, architect, Portsmouth-house, near Todmorden, before 2nd April.

BATH.

RYDE.—For a floating bath, 110 feet long by 56 feet wide, with thirty dressing boxes, waiting room, &c., to be constructed of timber, and moored near the pier at Ryde. Plans, &c., at the office of the Company's engineer, Mr. F. Newman, 16, George-street, Ryde, where sealed tenders are to be delivered before noon on the 31st inst.

MARKET.

IRELAND.—For the execution of all the works to be done in connection with the National Cattle Show, at the Limerick New Markets. Plans, &c., on Thursdays and Saturdays, at the secretary's office, 44, Upper Cecil-street, Limerick. Tenders for completing the whole work, including all materials. Tenders for executing all the work, timber to be supplied by Committee. Tenders may state, also, what sum would be allowed for materials after the show. Tenders for gas fittings and plumbers' work to be separate. Sealed tenders, addressed to the chairman of the Local Committee, to be sent into the secretary's office, on or before twelve o'clock, on the 5th April.

GATEWAY.

IRELAND.—For the erection of a new entrance to Knockdrin Castle, Mullingar, for Sir Richard Levinge, Bart., M.P. Plans, &c., at the office of Mr. J. M. Curdy, architect, 1, Harcourt-place, Lower Morrison-street, Dublin. Sealed tenders to be delivered at the above address, on or before the 5th April.

BRIDGES.

TONGE.—For the erection of an iron-girder bridge over the river Irk, in the township of Tonge. Plans, &c., with the surveyor, at his office, Commissioners' Rooms, Middleton, to whom sealed tenders are to be sent, endorsed "Tender for Bridge," not later than 31st March.

MONTGOMERYSHIRE.—For the erection of a plate girder bridge, for Broniarth, Melfod Montgomeryshire, of 100 feet clear waterway, and 18 feet over all. Plans, and specifications can be seen at the office of the county surveyor, Kerry, Montgomeryshire. Broniarth is about 10 miles from the Llanymynech Station, on the Oswestry and Newtown Railway. Tenders by April 7.

READING ROOM.

DORSET.—For the works to be done in the erection of a reading-room at Swanage, Dorset. Plans, &c., at the office of the architect, Mr. G. R. Crickmay, 77, St. Thomas-street, Weymouth. Tenders to be sent in on or before the 31st inst.

ROOF WORK.

BLACKBURN.—For three wrought-iron roofs for the Blackburn Gas-light Company, to be erected upon their No. 1 station, Jubilee-street. Plans, &c., at the Company's offices, Darwen-street. Tenders to C. Parkinson, Esq., chairman of the Company, or before the 31st March.

CHURCHES.

IRELAND.—For works to be done at the churches of Kiltanalea, co. Clare; Ballisakeery, co. Mayo; Kilfree, co. Sligo. Specifications in the hands of the resident ministers of the parishes. Tenders to be forwarded sealed, prepaid, and addressed thus:—"Proposal for Church of ———, The Ecclesiastical Commissioners for Ireland, Dublin," before the 4th of April.

IRELAND.—For the several works to be done in erecting the intended new Roman Catholic Church at Broadford, co. Kildare, for the Rev. Felix Tracey, P.P. Plans, &c., with John S. Butler, Esq., architect, No. 16, Hume-street, Dublin, to the 31st inst.

SUFFOLK.—For taking down the tower of Foxearth Church, near Sudbury, Suffolk, and building a new tower and spire, together with other works. Plans, &c., at the school-room, on the 24th of March, and five following days. Sealed tenders, directed to Rev. John Forster, Foxearth Rectory, on or before the 6th April.

CHAPELS.

CHIPPING NORTON.—For the erection of a Baptist chapel, and the conversion of the present chapel into schools, at Chipping Norton. Plans, &c., at the offices of Messrs. Gibbs, Thompson, and Colbourne, Stratford-upon-Avon, to the 8th of April, where the quantities, &c., may be had on payment of 10s. Tenders to Mr. G. B. Smith, Chipping Norton, on the 9th April.

YORKSHIRE. For the masons', bricklayers', and plasterers' work, carpenters' and joiners' work, plumbing, slating, painting, glazing, &c., for a new Primitive Methodist chapel, to be erected at Gouthrope, Selby. Plans, &c., with Mr. G. Brown. Tenders to the Rev. J. R. Parkinson, Gouthrope-street, before April 5.

MARKET RASEN.—For the whole or for any separate portion of the works required to be done in taking down the present, and erecting a new Wesleyan chapel to accommodate about 700 persons, with schoolroom and vestries adjoining, at Market Rasen. Plans, &c., at the vestry of the present chapel at that place, or duplicates thereof, with William Botterill, architect, 23, Parliament-street, Hull, till the 8th April. Tenders, endorsed "Tender for Wesleyan Chapel, &c.," to be addressed to the Rev. Jos. Oliver, Market Rasen, and must be received by him not later than the 9th April.

CHESHIRE.—For the whole or any part of the works required in the erection of the New Wesleyan Chapel, Chorley, Alderley Edge, Cheshire. Drawings, &c., with Hayley and Son, architects, 45, Cross-street, Manchester, to whom sealed tenders are to be delivered before the 31st inst.

PARSONAGE.

BURY.—For the several works required in the erection of the proposed parsonage house in connection with All Saint's Church, Bury. Particulars at the office of the architect, W. W. Whitaker, 32, St. Ann-street, Manchester, and the estimates to be forwarded to the architect on or before the 1st April.

DWELLING HOUSES.

GOSPORT.—For the alteration and reconstruction of two houses, known as Stoke House, Alverstoke, Gosport. Plans, &c., on the premises, and at the architect's offices, to whom the tenders are to be delivered, on the 31st inst. Quantities will be furnished on application to Charles Sewell, architect, Chandos-chambers, Buckingham-street, Adelphi, London, W.C.

BOW.—For the erection of a small house at Bow, Middlesex. Drawings, &c., at the offices of Mr. Gihlett, surveyor, 36, Southampton-buildings, Chancery-lane. Tenders to be delivered not later than the 31st inst.

CAMBRIDGE.—For the works to be done in restoring the north wall and roof to nave of Kirtling Church, Cambs. Drawings, &c., at the office of Mr. J. F. Clark, architect, Newmarket. Tenders, sealed and endorsed, "Tender for Church Restoration," to be sent to the Rev. W. Chavasse, Kirtling Vicarage, before the 24th inst.

POLICE-STATION.

DEVON.—For the erection of police station, &c., at Northtawton, Devon. Plans, &c., with Henry Ford, Clerk of the Peace, Castle of Exeter, and at the office of Robert Fulford, Esq., clerk to the Justices, Northtawton. Sealed tenders endorsed, "Tender for Northtawton Police Station," to be sent to Mr. Ford on or before the 1st April.

RAILWAYS.

INVERNESS AND PERTH JUNCTION.—The directors are prepared to receive tenders for the construction of two additional sections of the line, viz.:—1. the Dalnacardoch contract, extending 12 miles 1,383 yards or thereby, and comprising about 40 bridges and culverts for roads and streams, the span of the largest bridge being 60 feet. The excavations consist of about 250,000 cubic yards, including some rock. 2. The Aviemore contract, extending from the river Duluin to a point near Kinrara, measuring about twelve miles

1,140 yards. The excavations on this section are almost wholly gravel, and comprise about 300,000 cubic yards, and the bridges are about 14 in number, the largest being a girder bridge over the river Duluin, of 80 feet span. The rails, chairs, sleepers, spikes, fish-plates, and bolts will be supplied by the Railway Company. Drawings, &c., at the offices of Joseph Mitchell, Esq., C.E., Inverness, from whom, or from the assistant engineer on the line, duplicate schedules may be obtained at £2 2s. each. The cost of the detailed measurements will fall to be paid by the successful contractors. The line is staked out a distance of every 100 feet, according to the working sections. The deepest entrenchments are also pitted to ascertain the nature of the materials in the excavations. An assistant engineer will be at Blair Hotel, Blair-Athole, on 1st April at 10 o'clock a.m., to accompany contractors over the Dalnacardoch Contract; and at Lynvnlig, Kinrara, on 3rd of April, at twelve o'clock noon, to accompany contractors over the Aviemore Contract, and point out the works and the sites of the bridges. Draft-contracts proposed to be entered into will be seen with the assistant-engineer, or at Mr. Mitchell's office, on and after the 26th. Sealed tenders, addressed to the secretary, and marked "Tenders for Inverness and Perth Junction Railway Works, 'Dalnacardoch' or 'Aviemore Contract,'" as the case may be, must be lodged at his office on or before the 9th April, at twelve noon.

MASON WORK, &c.

CLEVEDON.—For the execution of various masonry and other works in the Clevedon district. Plans, &c., with Mr. G. Turner, surveyor. Sealed tenders for the whole, or any part or parts of the work, as shown in the plans, to be delivered to Mr. Turner, on or before 8th April.

COASTGUARD STATION.

DEVON.—For the erection of a coastguard station, at Clevelly, near Bideford, in the county of Devon. Drawings, &c., at the Custom-house, Bideford, or at the Admiralty Coastguard office, 12, Spring-gardens, London, S.W. Tenders to the Admiralty office not later than noon on the 7th April, under seal, and directed to the Commodore Controller General for Coastguard, and endorsed "Tender for Clevelly Station."

GASWORKS.

BLACKBURN.—The Blackburn Gaslight Company ask for tenders for the erection of a purifying-house and double retort-house, upon their No. 1 station, Jubilee-street. Plans, &c., at the Company's offices, Darwen-street. Tenders to be addressed to C. Parkinson, Esq., chairman to the Blackburn Gaslight Company, on or before the 31st March.

BRENTWOOD.—For the erection of a new gasholder, 40 feet in diameter, by 18 feet deep, with cast-iron columns, girders, &c., at the works of the Brentwood Gaslight and Coke Company, situated at Brentwood. Plans, &c., with the secretary, to whom sealed tenders are to be sent on or before the 4th April next.

FARM BUILDINGS, &c.

WILTS.—For the erection of farm-houses, extensive farm steadings, and numerous labourers' cottages upon the Earl of Pembroke's estate. Tenders to Mr. Clarke, architect, Corn Market-house, Salisbury, on or before the 7th April.

POYNINGS.—The Commissioner of Woods and Forests ask for tenders for the erection of two pairs of labourers' cottages, additions to farm buildings and other works, at Poynings, near Hursley-pierpoint, in the county of Sussex. The plans, &c., lay with Mr. J. Hollingdale, Woodreave, Poynings. Tenders to be addressed to the Hon. Charles Gore, office of Woods (Whitehall-place, Westminster, S.W.), endorsed, "Tenders for works at Poynings," to be sent in on or before 12 o'clock, on the 31st inst.

LINCOLNSHIRE.—For the several works required in the erection of a new farmstead, at Fotherby, for Everett Allenby, Esq. Plans, &c., with Jas. Fowler, architect, Louth.

COURT HOUSE.

BLACKBURN.—For the erection of a building, at Blackburn, for the sittings and business of the county court. Plans, &c., at the County Court office, Blackburn, until the 8th of April, on which day the tenders are to be sent (naming one sum for the whole of the work) to Robert Bendle, Esq., treasurer of county courts, Carlisle.

SEWERAGE.

HAMPSTEAD.—The vestry of the parish of St. John, Hampstead, Middlesex, ask for tenders for the laying down, constructing, and completely finishing certain intended brick and pipe sewers, 5,390 feet in length, or thereabouts, with other works in connection therewith, in Church-row, Frognal, and other places in and near the town of Hampstead; and for the maintenance of such works in complete repair for twelve calendar months. Plans, &c., and form of tender, may be inspected, and copies of tender and specification may be had on payment of 2s. per copy; and other particulars obtained at the surveyor's office, New-end, Hampstead. Sealed tenders, in the printed form only, addressed to the vestry clerk, must be delivered at the vestry offices on or before the 4th of April.

MANCHESTER ARCHITECTURAL ASSOCIATION.—At the meeting of this Association, held on Wednesday last, Mr. R. W. Aitken read a paper on "Botany in relation to Architectural Design," in which he proceeded to review the characteristics of the various leading styles in connection with their relative possession of the attributes of "fitness, simplicity, beauty, and expression;" and in referring to the primal sources of all decoration, viz., utility and beauty, remarked that, "The development of utility as first in order was natural, inasmuch as it is especially connected with man's physical being; beauty, with his intellectual; utility was necessary to his life as a creature, beauty to his existence as a human being. Having secured his physical comfort by the erection of a shelter from the external elements, and thereby developing utility in construction, he would not rest contented till construction should elaborate itself into decoration, and his intellect receive thereby something to satiate its wants."

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

C. P. H.—Not within our province to advise on such matters.

GOTH.—Received.

T. R. H. (Over Darwen.)—Probably next week.

INDIAN INK.—1. It would seem that a charge should be made of 5 per cent. on the amount of contract, less the usual charge of superintending the portion of the work not executed. 2. The client must pay the surveyor's charges for taking out quantities. 3. Certainly not; no such charge is justifiable.

M. W. W.—Thanks.

COSMOPOLITAN.—Next week.

P. W. Z.—We can make no promise until we have seen the drawings.

R.—Send name and address.

A COUNTRY BUILDER.—However desirous we may be to oblige our readers, we cannot go over half London to seek information, which they will find in our advertisement columns.

PROVINCIAL SUBSCRIBER.—We are at all times happy to hear from our provincial subscribers.

X.—Totally without foundation; this fact must be obvious.

ANONYMOUS.—We do not care to discuss the point.

W. W. T. C.M.—Declined with thanks.

S.—Shall hear from us.

W. E. N.—Thanks; shall have attention.

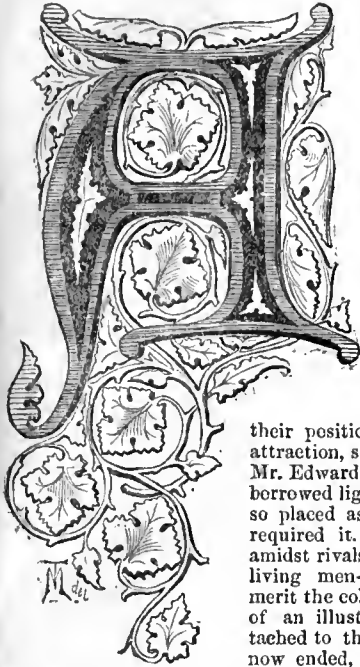
R. B.—Send papers referred to.

J. H. K.—Drawing shall be returned.

P.—Deferred for want of space.

. All communications to be addressed, The Editor of the BUILDING NEWS, 20, Old Broad-street, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 18 to 21, Old Broad-street. Advertisements are received up to six o'clock on Thursdays.

THE PUGIN COLLECTION AT THE ARCHITECTURAL EXHIBITION.



BS we mentioned incidentally last week, nearly the whole of the West Gallery at the Architectural Exhibition is occupied by a collection of the unpublished sketches of the late Augustus Welby Pugin. The trifling exceptions refer only to a few drawings of buildings designed by his son, which, we venture to think, would have been more fittingly hung in the adjoining galleries amongst the works of other living architects. They have no merit in common with the handiwork of the architect to whom the gallery is dedicated than have the works of others of his followers; and, valuable as they are as architectural designs,

their position, tacked to the great objects of attraction, smacks too much of intrusiveness. Mr. Edward W. Pugin's designs really need no borrowed light; they should not, therefore, be so placed as to kindle a suspicion that they required it. Their place should have been amidst rivals; in the bustle and the crowd of living men—to carry forward by their own merit the colours, honoured by the life-devotion of an illustrious sire, not ostentatiously attached to the silent trophies of his long, but now ended, struggle. Moreover, if the object

were to render them conspicuous, no position could be more ill-chosen for them. After examining, as they deserve to be examined, nearly a thousand drawings by the elder Pugin, we are in no mood to dwell attentively upon the designs of the younger. The reflections which this gorgeous illustration of Pugin's industrious and useful life occasion, and the interest which the faithful representations of world-famous architectural piles kindle in us, is continued so long as the same dexterous hand which sketched them introduces us with the same firm but tender touch to its own created forms; but it cannot be sustained to another's work. Having fed for hours upon Chartres and Amiens, Rouen and Florence, Evreux, Coutances, and Bayeux, all drawn lovingly by the man who, in his day, perhaps, alone fully appreciated them, we cannot be blamed if we pass by untouched the Beauchamp Almshouses, in the County of Worcester. We have no fault to find with the design or drawing of these latter, but, like every one who enters that nobly-lined gallery, we come to ponder over the memorials of the father, and do not expect to find them interlarded with extraneous matter by the son. As in Mr. Ferrey's book, the "memorials" are not altogether what they might have been, either in quantity or arrangement, and the "appendix" is quite superfluous.

Immense as is the labour visible in this gallery, we cannot but recall the fact that it contains but a fraction of Pugin's work. There are no drawings here which have been already published; no record of his many designs, decorative as well as architectural; even of St. George's, Southwark, we recognised but one drawing—of the chancel screen. A bird's-eye view, with smaller views in the illuminated border, is the only illustration of St. Augustine's, Ramsgate; and a single frame, similarly filled, gives us an equally inadequate notion of the many hours of toil which Pugin devoted to Bilton Grange. Of the assistance which Pugin rendered to Sir Charles Barry in the decorations of the Houses of Parliament, this exhibition tells us nothing, and it is as silent also upon many other similarly important works of the hard-working man whose services it seeks to commemorate. We cannot even say that it contains an epitome of his labours. We may, indeed, trace the growth of his mind from almost its earliest shoot though brilliant study unto its autumn ripeness, but there are evident gaps which a more careful collector might easily, we fancy, have supplied. We require to know all about Pugin before we enter this gallery, and, in order to appreciate what we see here, to recollect what he has done, of which there is here no indication. When we remember, for instance, with what masterly skill he designed metal work, the sketches made in the Ancient Treasury of St. Stephen's, at Vienna, have a peculiar interest, which, as mere barren studies, they would not possess. Again, his power of illumination, long before it became *fashionable*, was, as we here see, strengthened in the Public Library, at Rouen. From the picture galleries of Florence, from stained-glass windows, and from old half-ruined statues, he gleaned his knowledge of costume. His memoranda are here seen to have been rapidly made, with written notes of the colour or of other peculiarities which he saw in them. The embroidered vestments of the Italian priests, or rather the ornaments upon them, were noted down by him. Nothing—from the picturesque gables and spires which, in some ancient town, were grouped, as they had been for centuries, around the venerable cathedral, to the petals of a flower which unfolded its simple beauties beneath his feet, or the warm glow of a common candle's flame—escaped his searching eye, or was left unrecorded by his obedient hand;

and yet how often, spite of his untiring energy and his wondrous sketching facility, he must have wished for as many hands as he had hairs, that he might have made them as subservient to the great object of his life as were his every thought and action. We cannot think of Pugin and forget, although his staff be broken, that it was he who "made gape the pine," and let the delicate Ariel out; that to his fierce enthusiasm, to his singleness of purpose, to his spirit, unbending, as the knotted oak, to falsehood or dissimulation, but ever ready to sacrifice to the cause he served, we owe our advanced position, not only in Gothic, but in truthful art. We might, perhaps, have gained our present position without him, but it would have been years hence. His designs might, perhaps, occasionally suffer by comparison with those of many of his followers, but their labours could no more compete with his than a mole-hill with Olympus. He worked, without even a clerk, by the feeble light which he himself struck and kept burning amidst darkness and distrust. We now work illumined by the full brilliancy of his shining examples. We have skilled assistants to help us. We are encouraged by the approving shouts of believers in true principles instead of being, as he was, distracted by the roar and the hiss of opposition. English Churchmen, as well as Romanists, Baptists, and Presbyters, now all bend before and beneath the revived Gothic art. Pugin found very little sympathy even in the church which he beautified and enriched. Like the old builders, who, with trowel in hand and sword by their side, erected the second temple, he was obliged to keep his pointed pen ever ready to defend the pointed art which his pencil delineated against the attacks of his enemies. Those enemies have melted away like mist before the sun, and it is to their honour, no less than to his, that they were more ready, even than those of the creed which Pugin signally and unselfishly served, to do honour to his memory. But we are approaching tender ground when we seek only to signal to one and all by whom the old art is acknowledged, the gems which are offered to their gaze from the treasury of their noblest predecessor.

We have mentioned the absence of all Pugin's drawings for his published works. This deficiency may, without difficulty, be partially supplied by depositing on the table in the gallery a collection of the books which he periodically issued. They would be more welcome than the glass case now in the gallery, which holds specimens, unconnected with Pugin, of the photographer's skill who is about to publish these exhibited sketches. We should like to see the gallery as complete as possible with Pugin memorials, and to see the sketches better arranged. We have now some sketches belonging to one series inserted amongst those of another; others have no names attached to them, and a stranger to the subject is provoked by seeing something good, and at being at the same time left in ignorance of its whereabouts. Even where the name is vouchsafed to us, it is only in Pugin's illegible writing. The little scrap of description in the catalogue under the head of West Gallery, besides being meagre, contains an important error. In it the north side is filled with two different sets of drawings, whilst, apparently, the south side is left blank. North is, of course, written for south in one case, but such an error ought not to have escaped the proof-reader.

On the north we have, in fact, 117 designs and plans for the restoration of Balliol College, Oxford, together with a large collection of sketches from Avignon, Florence, Milan, &c. On the opposite or south wall we have eleven drawings, constituting the Scarsbrick Hall designs, with seventy sketches from Chartres, Lisieux, Evreux, Caen, Coutances, and Bayeux. On the west wall a series of sketches, chiefly English, large drawings of Bilton Grange, and St. Augustine's, Ramsgate, and the grand portrait of Pugin, by J. R. Herbert, R.A. On screen No. 1 we have a series of 160 original designs, and on the other five screens 370 foreign sketches.

Now, what we complain of is that there is no system in this arrangement, and that there ought to have been. Either they ought to have been classed in countries—as, for instance, the "French," "Italian," and "English" sketches—or in the order of their execution; or else according to subject, putting metal work together, ornament by itself, and costume, colour, composition, and detail, each under its own distinctive heading. Either of these different arrangements would have been simple enough, instead of which they are sorted with that eye to art, and with that spirit of order, which is seen only in a child's kaleidoscope. Nestled amidst finished and later works, we light by chance upon, perhaps, Pugin's earliest exhibited work, a "View from the back of the Hotel Bourbon, Rue Jacob." It is dated September, 1827. It has not his customary quaint signature, and was drawn evidently before he had adopted it. It is elaborately shaded, but does not show the masterly touch seen in the sketch of the "Well at Amiens" by the side of it. This latter sketch is the *beau ideal* of what an architect's sketch should be—a small perspective view, with enlarged geometrical sketches of every portion.

We have already hinted at Pugin's restless energy. When on board ship his pencil was still at work. One little sketch amongst the Italian and French sketches on the north wall, of the deck of a vessel, is exquisitely touched in. His sketches of Carcassonne Cathedral show that he never wasted time in making good-looking drawings. All that was likely to be useful to him in a building he drew, but no more. When he had nothing useful to draw he exercised his hand by sketching anything he could see. Hence we have the deck of a vessel, several views of St. Marie's Grange, a candle lighting up a curtain, &c. The palace of the Popes at Avignon was sketched, perhaps, from the interest he took in, and the reverence which he felt for, the head of his Church. His Venice sketches are rather poor. He seems to have appreciated Venetian art about as much as the historian of the "Stones of Venice" appreciated him. Giotto's chapel at Florence is shown us in a few lines. To one who

has not seen the original it is a bald representation, but to those who have seen it, Pugin's sketch perfectly recalls it. So it is, in a great measure, with the majority of Pugin's sketches. They were intended as aids to his memory, not as finished representations. One screen—the one in the north-west end of the gallery—contains a series of finished drawings for a contemplated work. As far as we can gather without that guide which we had a right to expect in the catalogue, it is a design for a chateau and for St. Mary's College. Both drawing and design enlist our warmest admiration; every detail is carried out with the same scrupulous care which characterises the elevations and plans. Nothing is left to be designed by assistants, by decorators, by stone or wood carvers, or by metal-workers. Pugin was above that kind of practice; from laying the first stone to carving the last finial he was the only architect of his work. Locks and keys, linen-chests, bells, crockets, wall decorations, inscriptions, stained glass, washing-stands, bookshelves, bedsteads, curtains—he designed them all upon the true principles which were the foundation of his too short life. Such a thorough, manly character is not often met with, but, when encountered, should be “grappled to our soul with hooks of steel.” He had failings, like the rest of us, but they lie beneath the stone which bears his illustrious name. The result of his short but laborious life is seen wherever the pointed arch rises emancipated from deadly depreciation—wherever the newly carved crocket climbs or the finial bursts in beauty—wherever the solemn clang issues from Gothic spires or the groined vault echoes the sacred chant—wherever richly coloured light shines through the traceried window or the deeply recessed oriel. In cottage and in cathedral, and in the long list of buildings which fill the gap between them, we may trace, in a greater or lesser degree, the victory which he initiated, and in the struggle for which he was ever foremost. The task he set himself was taken from his fallen hand and completed; but the honour belongs to him, and none are more free to acknowledge it than those who now gather their crops peacefully in the field where he, dauntless, in the midst of darkness and difficulty, drove the first furrow.

By the way, we have heard numerous complaints of the extra charge of a shilling made for admission to this collection. The Committee of the Architectural Exhibition ought certainly to have dispensed with it. The Pugin Collection is very useful to it in filling a gallery which would otherwise have been empty and a revelation of their poverty. The advertisement which the Exhibition gives to the proposed publication ought to satisfy the publisher of the Pugin Collection, without imposing a tax upon every visitor. The sooner the two parties come to some arrangement which will relieve the visitors of their cause of complaint the better it will be, we think, for the tenants of both galleries. At all events, as the contents of all the galleries have been hitherto shown for one shilling, they might divide that sum, charging sixpence for each collection; but the better plan undoubtedly would be to restore to us the scale of former years, and to let the Pugin Collection rank as part and parcel of the Architectural Exhibition. This ought to have been so settled at first, before the Exhibition opened; but it is not too late now to retrace a wrong step and to remove the cause of justifiable irritation.

BRITISH MUSEUM.

WE are requested to make known the following special regulations respecting admission to the British Museum:—

In order to give the public generally the utmost facilities for seeing the British Museum during the time of the International Exhibition at Kensington, the Trustees have laid down the following special regulations:—

1. That the Museum, instead of being closed from the 1st to the 7th May next, be closed on Monday, the 28th of April, and re-opened on the following Monday, the 5th of May.
2. That from the 5th of May to the 30th of August inclusive, the reading-room be kept open for readers, as usual, daily, Sundays only excepted; but not later than 5 o'clock.
3. That the Museum collections, including those parts of the library of printed books and manuscripts, to which visitors are now admitted on public days, be kept open daily, Thursdays and Sundays excepted, from 10 o'clock in the morning till 8 in the evening, during the months of May, June, July, and to the 16th of August, inclusive, but till half-past 7 only for the remainder of that month.
4. That during the same months and days the reading-room, and a small portion of the libraries annexed to it, as well as the whole of the north library, with the exception of its western extremity, be open for the admission of the public generally, only from 5 o'clock to 8, or half-past 7, as before mentioned; and that from 9 to 5 o'clock none but readers, for the purpose of study, be admitted to the reading-room, or to any of the libraries, except such of the rooms as are usually accessible to visitors throughout the year on public days.
5. That after 5 o'clock the reading-room and the libraries generally, be not used for the purposes of study.
6. That Thursdays be reserved for cleaning the several departments, and that no visitors, excepting readers, be admitted into the Museum on that day.

A. PANIZZI, Principal Librarian.

British Museum, March 24, 1862.

THE STATE PAPER OFFICE.—This structure, erected thirty years ago, is to be taken down; and the work of demolition will be commenced in a week or two, for the purpose of clearing the space for the new Government offices. All the documents contained in the State Paper Office will be transferred to the new buildings on the Rolls estate, in Fetter-lane, where readers will in future have the opportunity of consulting them. The accommodation is small at present, but the Master of the Rolls is taking measures to extend it.

CRITICISM.

CRITICISM is a subject upon which an idea which is certainly insufficient, and may be fairly said to be erroneous, is generally held, for the popular notion about it embraces little beyond fault-finding, and the minute and hostile examination of individual works, or even of detached portions of works. The idea that hearty praise, or a general appreciation of excellencies, great or small, should form part of it, is one far from universally held; and the fact that broad views and general principles lie at the base of all sound criticism, and are the first and most legitimate objects upon which it should be exercised, is still less generally appreciated. And yet both of these things are true, and need to be emphatically recalled to the recollection of many who attempt to criticise works of art, and the artists who produce them.

Criticism is a word identical in original meaning with judgment, but by one of those subtle processes with which the history of language abounds, we have restricted the use of the one word to mean judging of works of art or literature, while the other is made to embrace the consideration of all classes of subjects upon which an opinion has to be formed without distinction.

If it be understood, then, that the art of criticising ought to be held to mean the art of judging of certain products of human genius and skill, it will be readily perceived that the mere utterance of oracular *dicta* upon individual poems or pictures, books or buildings, will be but a part, and by no means the noblest part, of this art of judging. Solid grounds upon which to form opinions must be laid down. Sound principles of reasoning, and a suitable temper of mind must be acquired, and the art of correctly applying to individual cases broad principles already ascertained must be cultivated with care.

For the first, patient and accurate observation and a retentive memory are necessary; for the second, powers of generalising and of logical reasoning are essential; while the third requires much familiarity with the nature of the objects under consideration, as well as with the principles by the light of which they are to be viewed.

A critic—at any rate a critic of the fine arts—is not to be regarded as a judge sitting to execute law; his sphere is, at the present day, and will for long if not for ever remain a wider one, embracing quite as much the inquiry into the laws by which works of art ought to be regulated as that into the degree in which any given works of art have complied with or transgressed a given rule.

This is not the case in literature to the same extent as in the arts. The methods of human thought and the rules of literary composition have been more distinctly laid down, and traditions of criticism more directly handed down to us, than those of artistic design. It is not because there is less actually a right and a wrong in art than in literature, that the principles of the one are less clearly known or held than those of the other, but because literature has been almost continuously studied from the times of the greatness of Greece till the present day, while art has been followed fitfully and at intervals. And further, in our own country, as, in fact in all Europe, literature, in its rudiments or its refinements, has been universally taught in schools, colleges, and all places of learning, while art has been as constantly overlooked, so that those who would blush to utter a false quantity, or to write bad grammar, will unhesitatingly call Italian art pure Grecian, or declare in favour of the most glaringly inharmonious colouring or defective drawing, unaware that the one fault is of precisely the same character as the other; both alike betray ignorance of the rudiments of what ought to be the ordinary knowledge of a person of good education.

The same thing is true of thought and judgment, as well as of mere matters of information. You will find men of ordinary accomplishments, capable of weighing the relative merits of prose or verse writers, able to point out the defects in style of authors, their points of similarity or of contrast, and the reasons of their higher or lower position assigned to them; but there are, comparatively speaking, very few familiar with the works, the merits, the defects, the resemblances, and the differences between various schools of art, and between individual architects, sculptors, painters, or musicians. Still fewer are there at all capable of pointing out the grounds upon which such judgments ought to be formed, even if they themselves have arrived at decided opinions as to certain artists or certain schools.

The majority of great artists have never accustomed themselves to that accurate investigation of their own ideas, or that precise use of language which would enable them to embody in words the principles upon which they have worked—principles constantly underlying all their work, and yet, in many cases, never shaped to their mind in the form of rules; just as we may enjoy the perfect use of our mother tongue, and may speak it correctly, without having ever learned its grammar or its syntax systematically. We have consequently to seek in the works of artists, rather than from their written or spoken words, traces of the laws they have deduced from an observation of nature, or of other artists, for their own guidance.

The want of general information in the public mind relative to the arts is a great misfortune, but the want of carefully wrought out criticism, of admitted and well-founded maxims to guide the practice of artists and the opinions of their observers, and of simple, yet logically incontrovertible principles for those maxims to be based on, is a far greater misfortune, and one which presses alike upon artists and the general public. To the establishment of these, then, should the highest efforts of criticism be directed, for it is only in accordance with well established principles that individual works of art should be critically investigated.

Architecture—if free from some of the difficulties which beset painting

and sculpture on the one hand, and music on the other—is, nevertheless, a subject needing deep investigation, as will best appear if we come to examine the opinions held by the most eminent artists in that field of art, or advanced by those who criticise their works.

Our ideas are in complete confusion—one man declaring in favour of symmetry, another in favour of picturesque confusion; one maintaining the superiority of Pointed Gothic, a second of Romanesque, and a third of Classic; while here we have one artist depending entirely on form and proportion, there a second making everything subservient to colour, and again, a third willing to see excellence in architecture only in proportion as it is enriched by sculpture.

This is not, however, the worst, if only these artists would refrain from depreciating that which they do not themselves pursue; for each of these minds has got hold of one thread out of the great skein which must be twined together to form the perfect combination necessary to complete architectural art, and so far as a portion of the truth is seized upon, and held to, and worked by, so far all is well. Symmetry and picturesqueness, Gothic, Romanesque, Renaissance, proportion and colour, are each excellent portions of true architecture—nay, more, each one of these comprehensive words means so much that it may be quite enough to form the main feature of the architecture of one building, of one man, of one generation.

It is, however, when we come to find how exclusively each believer holds his faith; how the Gothic artist cannot believe that the Classicist may be right also; and the colourist cannot see beauty in fine form when in monochrome;—it is when we meet with bigotry, intolerance, and narrow-mindedness, that we begin to understand how much of ignorance we are all steeped in; how far Pugin's or any other authorities' "true principles" lag behind the external truths of nature, and how much we yet have to learn.

The last two centuries, unfavourable as they have proved to the arts, have witnessed an extraordinary and magnificent advance in the study of physical science, and the mutual relations of all the sciences to one another have been just as markedly brought into prominence as the facts and laws of the sciences themselves. Without doubt all true art is as much a whole as is all nature, and the obstinacy with which we persist in not only splitting the art into fragments but also in neglecting every fragment but one, and then condemning those who have fixed upon any fragment except the particular one we ourselves are enamoured of, shows how far we are still removed from a true critical understanding of what we are about.

The moral of all this is, that it behoves us to study the art of architecture with the direct aim of establishing its first principles, and only to criticise so far as we feel sure of having solid ground to go upon. The method of studying architecture most usually adopted has hitherto been the historical; and while no method could be better adapted for interesting the student, and for enabling him to remember with accuracy the facts with which his mind ought to be stored, historical study can be—often has been—pursued far without the necessity of investigating or understanding the principles of architecture as an art.

The value of the study of architecture as an embodiment of the great principles which belong to all the arts, coloured by and adapted to its peculiar requirements as constructive rather than purely ideal, has been till now too little recognised; it presents the noblest possible field for investigation, and, perhaps, no literature is of so much value to the architect as the attempts, more or less fragmentary as they have always hitherto been, which have been made to occupy this field.

The palm of honour here undoubtedly belongs to our eloquent but erratic art-critic, John Ruskin. Admitting fully the imperfections of his works—imperfections which have been remorselessly held up to light by many who have failed to mark much else—we cannot but remember with gratitude the efforts he has made to analyse the nature of architecture, viewed in relation at once to the necessities of construction and the fundamental principles of art.

Parts of the "Seven Lamps," and the first volume of the "Stones of Venice," will recur to the minds of those familiar with the works of Mr. Ruskin, and these alone would form a magnificent contribution to our stores of art literature. We are disposed also to think that his introduction of references to other arts while architecture is under special consideration, and to this art, in publications devoted to the more especial investigation of natural scenery, or of painting, are most valuable, as tending to rouse a feeling of the mutual dependence and relationship of all the fine arts, and to induce a comprehensive grasp of great principles.

We owe it to Ruskin if the English public is beginning to think and judge intelligently of architecture, and perhaps we owe it also to him if some of our architects are themselves beginning to think of what they are about. We have, however, barely made a commencement. With space diminished by our travelling facilities, distance annihilated by the photographic art, and the accumulations of all time placed at our disposal in a manner hitherto impossible, is it too much to hope that this generation shall witness a general spread among artists and people of comprehensive knowledge? We think not; and we confidently believe that an increasing appreciation of the excellence of all art, and an intelligent application of cultivated taste and well trained reasoning powers to the study of the art of architecture will, at no distant day, enable us to supersede many of our present, imperfect, partial, and prejudicial views by enlightened, truthful, and comprehensive critical judgment, founded upon the immutable truths of nature.

THE MANAGEMENT OF OUR ART INSTITUTIONS.

FOR several years every one who has taken even a faint interest in the management of our art-collections has been convinced of the utter inadequacy of the existing system to fulfil the duties which fall upon it. It has no public defenders. Its only armour is that which has in the course of years sluggishly grown upon it, but at the sound of approaching opposition instinct rather than activity causes it to enfold itself in this impenetrable and mysterious veil; calm and, apparently, indifferent, it evinces no sign of animation, however heavy or stinging may be the attacks upon it. Vulnerable points are periodically discovered, and sharp weapons are sheathed therein to their very hilts, but no quiver betokens internal disturbance or discomfort. There is no ebb of the vital tide, no relaxation of its tenacious grasp. There is neither life nor usefulness apparent in it until the spring-time comes, when it opens its voracious mouth, swallows the yearly-increasing Parliamentary grant, and then sinks again into a state of abnormous lethargy. In all other public matters we have some minister responsible for the expenditure upon them. The funds devoted to our art-galleries escape such inconvenient interference. The money may be improperly expended; pictures may be bought as works of art and sold as rubbish; but an elegantly turned sentence from the Chancellor of the Exchequer repudiating all responsibility is all the satisfaction which Government can afford to any complainant. The keeper of the National Portrait Gallery may enjoy his "dignified repose" at the public expense in Great George-street, but the only answer to inquiry is that it "is still an infant institution;" we must, therefore, make no clamorous noise around its cot, but submit meekly to the thralldom of its expensive monthly nurse, thankful that even the smallest of brass plates indicates the whereabouts of the bantling, and that we are even occasionally allowed to look, and expect, of course, to smile approvingly, upon its undeveloped beauty. The British Museum may be covered with unhealthy spots, its treatment may be condemned by its own officers, but no public control must, on any account, interfere with it. "The Trustees" are professedly responsible, but for any real responsibility which we can touch and handle as tangibly as they touch the public money, we might as profitably have a Board of Afghans or New Zealanders. Ministers who never otherwise go near the British Museum will, when they are wanted, go there to pass a cut-and-dried resolution, but they go as *ex officio* Trustees and not as Ministers who have to answer to the House of Commons for their actions.

The rotten system is defended by no Government, and yet each successive Chancellor of the Exchequer, whilst acknowledging the evil, puts forth some kind of palliation for, and asks us to submit a little longer to it. Whenever the subject is brought before Parliament it offers an opportunity for a very ingenious speech. No one could fence more skillfully with the question than did Mr. Gladstone lately but throughout the whole of his speech he never for an instant grappled it fairly and manfully. The real point demanded was that for the preparation of any estimate, and for the expenditure of any money, voted in aid of the British Museum, the National Gallery, and other art-institutions, one minister of the Crown should be responsible to the House of Commons. The resolution was clearly understood by every member, and by no one more so than by Mr. Gladstone; yet, how did he answer it? By admitting that the motion contained "little that is open to dispute;" that the speech of Lord H. Lennox was one "tending in the right direction towards unity, responsibility, and efficiency in the management of institutions of great public importance;" and then, without venturing to offer a negative to the motion, he cleverly led the members off on a wrong scent, by showing that the mover and seconder of the address differed in the details of their respective remedies. Because Lord H. Lennox and Mr. Gregory did not agree in a minor matter, he "passed by" that portion of the subject; because the National Portrait Gallery is an infant institution, he finds therein a reason for passing by also the criticism applied to it. It is to no purpose that Lord Lennox showed that the National Portrait Gallery costs the country something like 18s. for every visitor to it. The charge is avoided—not met. But he proposed to make a stand on behalf of the British Museum. Committee after committee, we are told, has sat upon the British Museum, which shows that the mind of the country and of Parliament was beginning, for the first time in our history, to be turned to the subjects of art and science and education, as matters of political concern. The very fact of those committees sitting one after the other proves, we should have thought, that the government of those institutions was imperfect—that there existed obstacles to their full development, and barriers to their improvement; and when we call to mind that the deliberate opinions of those committees have been disregarded, and that the constitution of the Museum remains unchanged in spite of them, we cannot be far wrong in concluding that the time is come when a resolution founded mainly upon their reports should be adopted by the House of Commons.

Throughout the whole of his dexterous address Mr. Gladstone proceeded on one plan. In one sentence he admitted the statements of the proposer of the resolution, and then, in the next, threw a veil over the concession. Whilst we say that the administration of these institutions is practically defective, the Chancellor of the Exchequer says they are "theoretically and speculatively imperfect." Whilst we think that the sooner the batch of administrative irresponsible Trustees are replaced by one responsible minister of the Crown the better will it be for the growth of art, Mr. Gladstone thinks that the constitution of the administrative body may fairly, "at some future time," be submitted to reconsideration and revision. Having admitted so much, he trotted out the subject of a removal of the Natural History Collection in order to distract the attention of the House from the main question, which was, that whatever public money is to be

expended, and whatever arrangements are made in consequence of that expenditure, ought to be placed under the direction of a responsible minister of the Crown.

Within the last fourteen years upwards of £2,200,000 has been voted without the faintest personal or individual responsibility. We know that we have different Boards of Trustees composed of the most heterogeneous members, and of the most cumbrous character; that the greater half of them are as ignorant of, as they are indifferent to, what the lesser half does; that some hold their offices on account of theological, and others on account of political, eminence; that some have a seat at the Board because their great ancestors took an interest in some special department of antiquities, and either gave or sold them to the nation; but that few take their seats at the Boards in consequence of their knowledge of art, or of their ability to give their time to promoting its growth. Moreover, we know that the opinions of the working few can at any meeting be overruled by the majority, who know nothing about the subject, and who consequently think it wise to allow things to remain as they are rather than necessitate even a small amount of thought upon the consequence of any proposed change; that whatever jobbery oozes out, we might as well grasp at a ball of quicksilver as attempt to get hold of a responsible person.

We are asked to reserve our strictures until the proper time for considering the matter, and, after waiting, are then told that the proper time has gone by. Every kind of evasion is resorted to in order to silence opponents, and every subterfuge adopted to stifle inquiry. A plea of guilty is put in to avoid exposure, and then a point of law is raised which sentence should be deferred, thus making the discussion refer but slightly to the indictment.

It is high time that these tactics should be abandoned, and that the question should be decided upon its merits. Lord H. Lennox may see a vista of promise in the speech of the Chancellor of the Exchequer. We can discern there only a desert mirage, and on reaching it we shall expect another attempt to flatter us into silence by a repetition of the illusive promise.

What is required for the interest of art is, a minister with a seat in the Cabinet, who shall be entrusted with authority over our art-institutions, and over our public monuments, and who shall be responsible to the House of Commons, and through it to the country, for the expended money and for the works it is spent upon. When we have that concession made to us we shall have plenty of improvements to make in the management of our art-institutions, but until we possess a responsible director of this department, all reports of committees on the subject and all suggestions as to their adoption are, it is to be feared, but as seed scattered in stony places.

WORKS AT THE PORT OF SWANSEA.*

THE Port of Swansea was situated in the centre of an extensive bay, at the embouchure of the River Tawe, up which the tide flowed for a distance of three miles; but, as the ordinary flow of the river was trifling, the maintenance of the channel was chiefly dependent upon the ebb and flow of a large body of tidal water between the piers. Previous to the year 1791 there were only a few insignificant wharves near the mouth of the river, and there was a bar at the entrance, over which the depth of water did not exceed from 16 to 17 feet at spring tides. The effect of the construction of the piers, which still remained as they were completed in the year 1800, from the designs of Captain Huddart, F.R.S., had been to lower the bar and to drive it further out to sea; so that in 1831 the depth of water had been increased to 20 feet. The eastern pier was 1,340 feet, and the western was 580 feet, in length. The author then alluded to the report submitted to the Harbour Trustees by Mr. Telford on the 5th of February, 1827, in which he recommended that the old and a proposed new channel of the river should be converted into floats, as well as to the opinions of several other engineers, including Mr. Jesse Hartley, who, in 1831, suggested that a new cut should be made for the river, which was to be "canalised" by the construction of a weir across the mouth, and that the town reach should be appropriated to a dock and half-tide basin. In the following year Mr. Hartley, in a further report, adhered generally to his former plan, but advised, in addition, the deepening of the harbour by dredging. Fortunately, in the author's opinion, the works for the "canalisation" of the river were not carried out. A new channel was, however, commenced in 1840, and completed in 1844, at an expense of £23,000. Its effect had been to lessen the risk to shipping, and, by giving a better direction and greater force to the outgoing current, to improve the navigation. In 1845 Mr. Rendel was consulted as to floating dock accommodation; and, under his direction, the construction of an entrance, with a double sill, was proceeded with as a preliminary step to the conversion either of the river, or of the town reach, into a float; but of this work the masonry alone was executed.

In his first report to the trustees in February, 1849, the author proposed the formation of a dock on the site of the town reach, or old bed of the river. It was subsequently determined to construct a dock and half-tide basin, of the respective areas of 11 acres and 2½ acres, with a lock entrance to the dock, 160 feet long and 56 feet wide, and an entrance to the half-tide basin 60 feet in width, having a depth of water over the sills, of 22 feet 6 inches, and 25 feet 6 inches at high water of ordinary spring tides. A small lock connected the Swansea canal with the float, and another, at the head of the float, communicated with the various works on the banks of the river above. A small dock leading from the float, with an extensive range of warehouses round its margin, was also constructed at the same time for the Duke of Beaufort. The works for the lock and float were commenced in November, 1849, and completed in

December, 1851; those for the half-tide basin were begun in 1856, and were finished early in 1861. The total cost of these works, exclusive of the quay walls, had amounted to £95,688. In addition, the lower portion of the river to the piers-heads was straightened, and both it and the new cut were deepened by dredging. By these means the depth of the entrance channel had been increased 4 feet since 1850. There was nothing peculiar in the construction of the works, but their execution was attended with some difficulty, as a large portion had to be performed by tide work, with as little interruption as possible to the trade of the port. The foundations varied from hard concreted gravel to soft sandy clay, extending to a considerable depth.

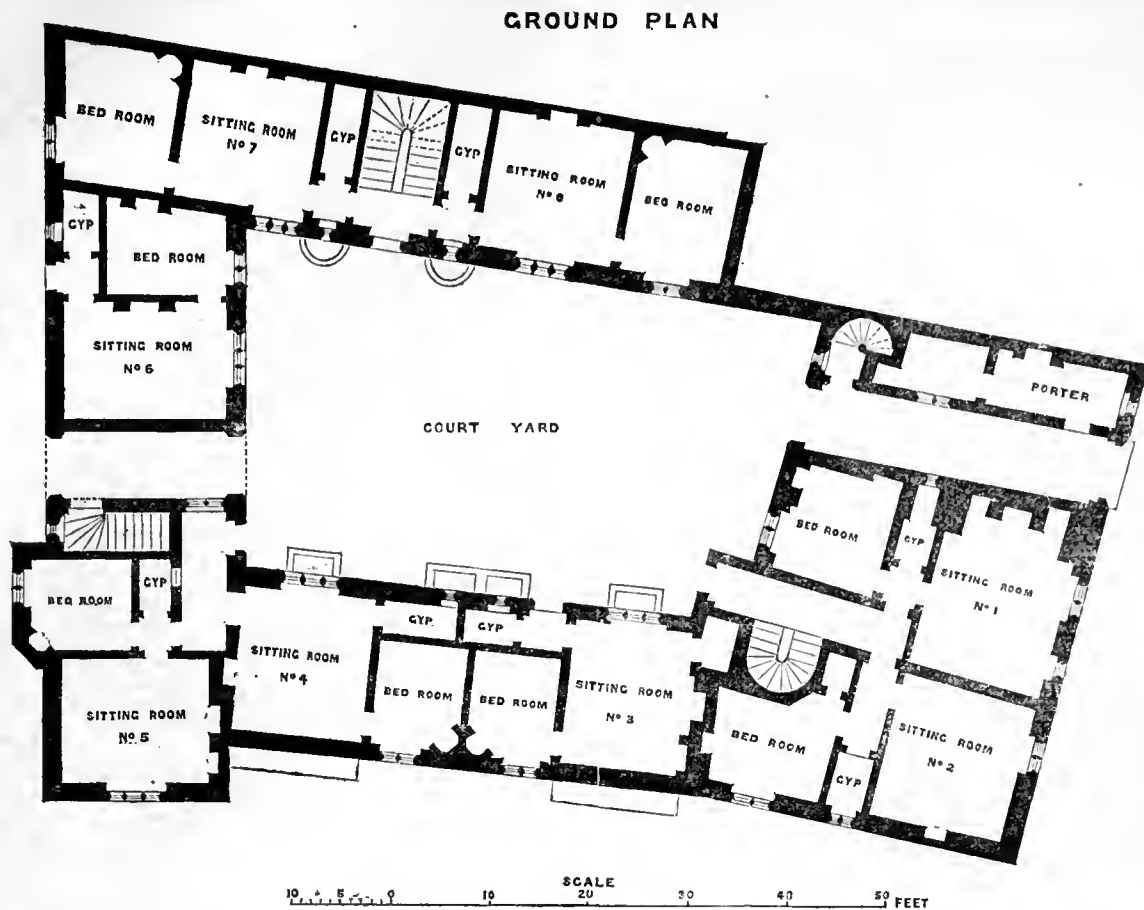
The most important work connected with the port of Swansea was the range of floating dock accommodation called the South Dock, which was formed on the foreshore of the sea beyond high-water mark. An Act was obtained, in 1847, for the construction of this dock, according to a design furnished by Mr. T. Page, M. Inst. C.E. In 1850 the author was requested to make the necessary plans for a trumpet-mouth entrance basin, having an area of 3 acres; for a half-tide, or outer dock, entrance, 70 feet in width, with a single pair of gates, having a depth of water over the sill of 24 feet; for a half-tide basin, or outer dock, containing an area of 4 acres, with a depth over the sill of 25 feet 6 inches; for an entrance lock, 300 feet long and 60 feet wide, divided by intermediate gates so as to form a greater or smaller lock, with an average depth over the inner sill of 22 feet 6 inches; and for a dock having an area of 13 acres, with a depth of 24 feet. Considerable progress had been made with these works, when they were suspended, in 1855, for want of funds. They were resumed in 1857, and were completed in 1859, at a total cost of £169,073. One of the first operations was the formation of an embankment to exclude the sea. Careful observations showed, that the main action of the sea and the set of the tides were to the eastward, towards the Mumbles headland. It was, therefore, decided to construct a series of timber groynes, at intervals of 1,500 feet, extending from the shore to the line of the proposed embankment. Rough boulder gravel, found immediately under the sand and the made ground, was tipped between the seaward-ends of the groynes, until a shingle beach, of great depth, was gradually formed, which served as a face to the embankment, and proved an effective barrier to the encroachments of the sea. The centre of the embankment was composed of the clay and peat found in the excavations, so that something like a puddle dyke was formed, and very ordinary means were sufficient to keep down the accumulation of water within the works. When the sea embankment had advanced some distance, the masonry of the dock walls was proceeded with. These walls consisted of rubble, with coursed rubble facework to a height of 2 feet below the general level of the surface of the water in the dock. They were faced in the upper part with ashlar, projecting 3 inches beyond the rubble facework. They were backed with the lightest and driest material that could be procured, in layers forming an angle from the wall, and rubble drains, with pipes for carrying off any spring, or upland waters, were placed at intervals in the walls. In no instance had any failure taken place, although the walls were subjected to a severe test; inasmuch as they were nearly completed when the works were suspended, and, on their resumption, the dock and outer basin were found to have become filled with water. Details were then given of the lock and entrance, from which it appeared that they were constructed, generally, with elliptical inverted arches of rubble, the quoins and floors, or platforms, being of sandstone ashlar, obtained from the coal measures in the neighbourhood. The pointed sill stones and the hollow quoins were of greenstone and syenite, from the Carling Nose and Barnton Mount Quarries, near Edinburgh. The sill stones were carefully toothed and bonded into the floor stones, so as to avoid a long straight joint. The recess and side walls were of rubble, with ashlar facework in the upper portion, similar to the dock walls, but the wing walls were faced throughout with ashlar. The filling and discharging culverts were of brickwork. The sluice frames and paddles were of cast-iron, faced with brass. In the lock and entrance gates, the heel mitre posts and the lower rib were of the best teak and English oak, and the ribs and planking were of pitch pine. Across the lock there was a swivel bridge, in one leaf, consisting of two wrought-iron tubular girders, with a superstructure fitted for railway or road traffic. There being no backwater, the waste from lockage was supplied by a steam centrifugal pumping-engine of 24 horse-power.

The successful application of hydraulic power for working the usual hand gear at the float lock, and at the lock at Newport dock, with much heavier gates, determined the author to adopt the same plan at the new dock entrance, as, in case of any accident happening to the hydraulic machinery, the usual means were then always available. As it was of the utmost importance, in the shipping of Welsh coal, that as little breakage as possible should take place, the hydraulic drops, or hoists, were so constructed as to deliver the coal into the hold of any class of vessel immediately at the hatchway; allowance being also made for the difference in size of the broad-gauge coal-waggons, the weight of which varied from 14 to 19 tons. The various machines employed for opening and shutting the gates, bridges, and sluices, for working the capstans, for discharging ballast, and for loading coal, as well as for the shipping and discharging of general cargoes, were upon Sir William Armstrong's hydraulic system, having accumulators equivalent to an effective pressure of 750 lbs. per square inch.

With respect to the work performed by the hydraulic machinery, and its cost, it seemed that, during the year ending October, 1860, the actual expenditure for engine power had been £22 16s. 1d. per week, or at the rate of 0.26 of a penny per cubic foot of water used for pressure. The cost of working was—by the cranes, 9-10ths; by the combined drop, 5-10ths; and by the waggon drops, 4-10ths of a penny per ton. But, inasmuch as the engine power was never fully employed, this statement must not be received as conclusive, as regarded the capabilities of the machinery. With the 80 horse-power steam-engine, it was believed that 100,000 cubic feet of water could be pumped per week, at a cost of £30, or at the rate of 0.072 of a penny per cubic foot of water; and that of this quantity 80,000 cubic feet would be available for working the cranes and the coal-drops, at a cost, for the hydraulic power alone, of about 1 farthing and 1-7th of a penny per ton respectively.

The commercial effect of the construction of the dock works and of the general improvement of the harbour was shown by the great increase in the tonnage of vessels frequenting the port. In 1851, on the completion of the first, or north dock, this amounted to 269,454 tons only. In 1860 it was 582,355 tons, and during the year 1861 the foreign tonnage had increased 10 per cent., and the trade was likely to extend, owing to improved communications with the steam-coal and the iron-producing districts, as well as with the heart of the kingdom.

* The substance of a paper read before the Institution of Civil Engineers, by Mr. JAMES ANERNEY, M. Inst. C.E., who stated that he proposed to give an account of the past and present history of these ports, so far as it possessed engineering interest, and to describe the works connected with them, rather with a view to the elucidation of general principles than of entering into matters of detail.



MASTER'S COURT, TRINITY COLLEGE, CAMBRIDGE.*

THE MEDÆVAL COURT AT THE GREAT EXHIBITION.†

OUR readers are aware that the Ecclesiological Society applied for a space in Class 30 of the Great Exhibition, to serve, in legal language, as a "conduct-pipe" for works of architects and artists friendly to the Society, and willing to join us in a united representation of our phase of art. This application was favourably entertained. At the same time, several other exhibitors, distinguished in various branches of mediæval art, religious and secular, had asked for and had obtained space in the same Class. The time drew nigh to map out the area among the different applicants, the immediate labour being divided between Mr. Waring, the superintendent of the Class, and a committee of exhibitors presided over by Mr. Craze. Observing, as they did, that we came forward in the character, so to speak, of super-exhibitors, within our own space, and that the works of the other mediæval exhibitors in the Class were homogeneous with our own, they proposed to us that we should take the control of the whole mediæval department within that Class, receiving and arranging a Mediæval Court; under the obligation, of course, to provide for the list of exhibitors who had already received their allotments. We did not hesitate at once to close with an offer made in so friendly and complimentary a manner, and so desirable for the objects which we had in view; while the exhibitors who were thus placed in correspondence with us most cheerfully acquiesced.

Accordingly, we are in possession of a court of 50 feet square, advantageously placed in the open space on the north side of the nave, and close to the eastern dome. Mr. Burges and Mr. Slater have agreed jointly to carry out the arrangement of it, and in their hands we are sure that it will be well done. We have no wish to forestall anticipation by a detailed catalogue of the Mediæval Court; but we may, in passing, mention that nearly all branches of ecclesiological art will be most satisfactorily represented. Sculpture will partly appear in completed works and partly in casts. We may note a reredos by Mr. Street, executed by Mr. Earp; and a portion of that for Waltham Abbey, designed by Mr. Burges, and executed by Mr. Nichol, with the cartoon of the rest. There is likewise a reredos, by Mr. Teulon, carved by Mr. Earp; and another by Mr. White, and a cast of the sculptures in the Bedminster reredos, sculptured by Mr. Farmer, under Mr. Norton's directions. Mr. Redfern contributes casts of his sculptures of the Ascension, for the Digby mortuary chapel at Sher-

borne, and for Mr. Slater's Westropp monument in Limerick Cathedral; the latter being arranged in connection with a portion of the actual carved work of the monument. Mr. White and Mr. Norton contribute fonts; and there will be a cast of the Renaissance font at Witley, which Mr. Forsyth carved for Mr. Dawkes.

Mr. Philip will contribute a cast of Dr. Mill's monument (designed by Mr. Scott) and effigy at Ely. Mr. Nichol will send another effigy, executed under Mr. Burges' eyes, and arranged on a high tomb in connection with some subjects in relief. Mr. Forsyth sends the late Lord Cawdor's high tomb, of which Mr. Nesfield was architect. Statuary by Mr. Farmer and Mr. Forsyth will also appear. Messrs. Clayton and Bell give one of the circular panels, with an incised subject, for the Lichfield pavement. In woodwork there will be the stalls of Chichester, carved by Mr. Forsyth from Mr. Slater's design; Mr. Burges' piquant painted furniture; Mr. Norman Shaw's rich bureau, executed by Mr. Forsyth, which was shown a year or two since at the Architectural Exhibition; and a decorated organ by Messrs. Prichard and Seddon.

Metal-work will be largely represented in contributions by Mr. Skidmore; and Mr. Street will send the iron font cover for St. James', Garden-street, by Mr. Leavers. The Ecclesiological Society will have the satisfaction of exhibiting the frontal which it presents to St. Paul's cathedral, designed, according to the "Cologne" method, by Mr. Bodley, and executed by Mr. Bell. The Dean of Peterborough has also most kindly lent the new frontal for his cathedral, executed by the Ladies' Ecclesiastical Embroidery Society; and the same Society sends a frontal for Clehonger church, designed by Mr. Preedy. The court will also contain hangings by Messrs. Jones and Willis, executed after Mr. Street's designs. The progress of Mediæval art-manufacture in general will also be illustrated from the firms of Messrs. Morris and Marshall, Harland and Fisher, and Hayward.

We might name other contributors, but we have enumerated enough to show that the schools of art, which in the Exhibition of 1851 were all but exclusively represented in Pugin's court, will now be taken up by independent hands, with the advantage of the schooling of eleven laborious and eventful years. But mediæval art is not confined to our own court. The National Committee for Architecture has also the control of a court for the exhibition of architectural art-manufactures, of all styles, situated on the east side of the south limb of the transepts, which project from the east dome, in which we are glad to say that Gothic art will not occupy an unobtrusive position. It will contain the marble pulpit for the nave of

* For View and Description see pages 328 and 329, Vol. VII.

† From the *Ecclesiologist* for April.

Westminster Abbey, designed by Mr. Scott, and executed by Mr. Field, which is to be offered as a tribute to Dean Trench's exertions in establishing the special services, and another marble pulpit by Mr. Street, executed by Mr. Earp. It will also comprise metal-work by Mr. Leavers, and a portion of the wall-space will be occupied by the prize subjects for this year of the Architectural Museum, out of which we may select the wood carvings and our own colour-prize panels for special praise. Across this south-east transept, and as if connecting that court with our own, will stretch the lofty metal choir screen, which Mr. Skidmore has executed for Hereford Cathedral, under Mr. Scott's directions. Mr. Hardman will also, we believe, be fully represented in the same portion of the building. In the galleries of the special Architectural Exhibition, comprising drawings and models, which abut on the north-east angle of the east dome, we have reason to think that the Gothic school will throw down the friendly gauntlet with spirit.

With regard to the controversy which they (foreigners) and we have equally for years been conducting with the classical schools, we are little in fear. Within the British side of the Exhibition building, by the free and ungrudging consent of all who are engaged in the work, this controversy has been one of perfect friendliness and mutual co-operation. Each school has striven to make the general success the greatest by doing most for its own cause, and cheering the other on to similar exertions. The verdict will be with the visitors, both public and critical. Of one thing for our own part we are certain, that Mediæval art, in all its varieties, will occupy a position very different from that of, and hardly to have been expected, in 1851.

STEWKLEY CHURCH, BUCKS.

MOST of your readers are probably acquainted with this interesting church, either from actual inspection or from the engraving of it given in Lysons. Its history is also well known as part of the history of art in this country. It is the sister church to Ilfley, built on the same plan, in the same style, and probably by the same architect, as both churches were given about the same time to the Priory of Kenilworth. Hitherto, for seven hundred years, Stewkley Church has been fortunate enough to escape any alteration, and it is, consequently, the most perfect example of a rich Norman church of the middle of the twelfth century that we have remaining in England. But, after escaping the perils of the Reformation in the sixteenth century, the great Rebellion of the Puritans in the seventeenth, and the ignorance and apathy of the churchwardens of the eighteenth, it is about to fall, in the nineteenth, under the hands of modern fashion, which has been more destructive to our old parish churches than all the others put together. The west end is to be pulled down, and the nave lengthened 15 feet, or one bay, on the pretext of making more room, but in reality to get rid of an ugly western gallery, which holds, in fact, more people than the proposed new bay of the nave will hold, and is nearer to the desk, the pulpit, and the altar. This gallery is to be got rid of as an eyesore, and in compliance with the well-known dictum, "that it is impossible to pray in a gallery." This dictum I believe to be absolutely false; as matter of fact, a person who is really disposed to pray will not be hindered from doing so by the accident whether he is placed in a gallery or on the floor. This dictum, then, is mere cant or affectation, and it has been, in practice, one of the most mischievous of all the dictations of modern fashion. The large gallery at Stewkley is an ugly thing which I should, abstractedly, be glad to see removed; but it is a mere piece of scaffolding, removable at any time when funds are forthcoming to build a chapel-of-ease, or school-room chapel, in another part of the parish, to hold the people now contained in the gallery, and the venerable structure would still remain intact.

The circular which is issued for the purpose of obtaining money under the pretext of accommodating a larger number of worshippers, states that the parish is 3 miles long, and the population 1,500, while the church accommodation is only 200. Surely this is a strong case for a chapel-of-ease, and not for a mere temporary makeshift, which would destroy the original plan and proportions of the old church for ever, whilst the next incumbent will still cry out for a chapel-of-ease. This gallery hides nothing but a part of the small west window, the head of which is seen above it, and a small part of the top of the two side doorways, which would be avoided altogether by raising the front of the gallery about a foot. It seems to me just a case where a mediæval architect would have shown his skill by making this useful gallery an ornamental feature. This was the great glory of the mediæval architects. They never shirked a difficulty, but made useful things ornamental also. The modern fashion of abusing all galleries appears to me to be carried to an absurd length. Galleries of several kinds were freely used in the Middle Ages, and were no disight to the building. The triforium gallery of Westminster Abbey is not an ugly feature, nor the Norman galleries across the ends of the transepts of Winchester Cathedral, which would be equally applicable for a western gallery. The Cathedral of Frankfort-on-the-Maine has galleries round three sides, part of the original design of the church, built of stone in the best period of Gothic art, always intended for worshippers, and still in use. The numerous roof-lofts in our parish churches in Somerset and Devon are not ugly features, and yet they are galleries to all intents and purposes: loft is only another name for gallery.

But I had almost forgotten another grave and serious objection to the western gallery at Stewkley. When people first come into the church they will not be able to see the new roof which is to be put on the nave, and in which the original high pitch is to be restored, in compliance with another modern prejudice. That the outer roof at Stewkley was high-pitched is plain enough from the weather-moulding remaining on the tower, but it by no means follows that the high roof was open to the rafters within. It is far more probable that the nave was originally covered by a flat ceiling, painted, in the style of the one we have remaining at Peterborough, and which Mr. Burges has had the spirit and good taste to adopt as his guide at Waltham, with remarkably good effect, as is generally acknowledged. That this was the usual covering of our Norman churches I have not the slightest doubt; it is the natural covering, and more consistent with that style than a high-pitched roof. In Italy, where the Roman style has never been discontinued, flat ceilings are almost universal; and although Peterborough is the only one that has escaped in this country, there is

every reason to believe it was the usual custom here also when the church was not vaulted.

There is an eastern gallery of the twelfth century remaining at Compton in Surrey, the front of which is engraved in the "Glossary of Architecture," and there are traces of similar galleries at the east end of several other Norman churches, as at Darent in Kent. This makes it evident that if the architects of those days had wanted a western gallery they would have built it, and have made it an ornamental feature. This is actually the case in many churches of the twelfth century in some parts of France, especially in Perigord, where the western stone gallery is the rule, rather than the exception, in small parish churches.

Another part of the plan proposed for Stewkley is to remove the "donkey-boxes," and restore the open seats, to which every man of any pretension to good taste or good feeling would wish God speed. The mischief that has been done to the Church of England by the introduction of this Puritanical innovation is incalculable. These high enclosed pews may be traced to the Presbyterians of Scotland, and to the time of the Great Rebellion. This hideous and most mischievous and un-Christian fashion followed chiefly the direct line from north to south, and reached across the Channel into Normandy and Piedmont; the eastern and western counties of England generally escaped the invasion of this plague, and for the most part still retain the fine old open seats which are peculiar to England, and are generally of about the time of the Reformation—some previous to it, others shortly after—and are the most fitting and the most ornamental furniture of God's house that has ever been invented. Those who have seen our genuine old English carved bench-ends in Somerset and Devon, Norfolk and Suffolk, will allow that it is impossible to praise them too warmly. But there is a modern prejudice against these also; nothing will go down now but moveable chairs, after the French fashion—the most ugly and inconvenient furniture for a church that ever was contrived. Those who have only a little knowledge of the Continent may admire the fine open space in the nave, when the chairs are all carefully stacked up to hide the windows of the aisles; but those who know the Continent well, and have had practical experience of the use of chairs, will be loud in condemning them. I should have thought that the English church in Paris was enough to satisfy any one of this. The miserable chairs standing at all sorts of angles, and with a second chair for each fine lady to kneel upon, which may be seen daily in most foreign churches, were found to take up so much room, that it became necessary to arrange them in rows, with deal boards nailed or tied to the back of them to keep them straight—as ugly and clumsy a contrivance as could well be imagined. Yet to comply with this new prejudice, modern architects commonly propose either at once to introduce chairs over the whole or part of the nave of a church, or, in order to lead the way to it, make their open benches as ugly and inconvenient as they can contrive, and put kneeling-boards to them, on which it is impossible to kneel for many minutes without serious pain. To my mind this interferes with prayer far more than galleries do.

Galleries were introduced into our churches in many instances by good and pious people as a makeshift,—an endeavour to remedy as well as they could the evils which had resulted from the system of enclosing the greater part of the floor of God's house with large square hideous boxes for the accommodation of the few rich at the expense of the many poor. By this system the poor were compelled either to remain ignorant heathens, or to become schismatics or heretics. To remedy this as far as possible, galleries were in many instances built for the poor, and we should hesitate before we remove them until we have supplied something better. Unfortunately, the time at which these galleries were generally erected was one of extremely bad taste and great ignorance of art, and consequently they are often as ugly as stupidity could make them; and sometimes they are quite useless. In all such cases let them be destroyed, whenever it is practicable, without causing a more permanent and serious injury to the fabric. But a gallery is a piece of furniture removable at any time, and in such cases as Stewkley it is better to endure it a little longer than do irreparable injury to an historical monument of importance.

If the fabric must be altered, the plan proposed may be the best that is practicable. It is intended that each stone of the west front shall be carefully marked, and replaced in the same position; and that the side windows shall be so scrupulously copied from the old ones, that in a few years' time no one can tell that the plan of the church has been altered at all. But this seems very like falsifying history. If a new west bay must be added, it would be more consistent with the professed object, and more truthful, to let it be designed and built at once of two stories, in the same manner as the domestic chapels and the almshouse chapels of the middle ages usually were, or as the transepts of large churches frequently were, and the west ends of churches in some districts (as already mentioned), and as they would have been in other places if the western gallery had been wanted. There is no occasion to go abroad for a model for this, it may be made thoroughly English. The manner in which some modern architects seize every opportunity to stick a bit of French, German, or Italian Gothic into our old English churches, makes it dangerous to refer to any foreign examples from which ideas might fairly be taken, if they would only be at the trouble of translating them into English, and making them assimilate with English art. One is continually reminded of that well-known vulgar bore in society, the man who has been abroad and knows a little of some foreign language, and who must be always displaying his little knowledge by interlarding his conversation with scraps of French, German, or Italian.

The incumbent of Stewkley is actuated by the best motives and intentions, and is very unwilling to disturb the fabric of his very remarkable old church, but the influence of modern fashion has been too strong for him; and, after some hesitation, he has yielded to its power. I hope it is not yet too late to make him see the barbarity of damaging an interesting page of the history of art in England, and feel that it is better to endure the eyesore of an ugly piece of scaffolding for a few years longer than to disturb the venerable fabric committed to his charge. The clergy are our natural conservators, and it is only since the spirit of change and innovation has reached them that so much irreparable mischief has been done.

JOHN HENRY PARKER, F.S.A.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post*. Gold watches, 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enable persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

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NORTHERN ARCHITECTURAL ASSOCIATION.

THE annual meeting of the members of this Association was held in the Old Castle, Newcastle-on-Tyne, on Tuesday, the 25th ult. The President of the Society, Mr. DOBSON, took the chair.

A number of pencil drawings of architectural subjects and ornaments by Signor Bulletti, the Italian artist employed by the Duke of Northumberland in making the restorations at Alnwick Castle, were laid upon the table for inspection.

On the motion of Mr. DUNN it was agreed that the Secretary tender the thanks of the Society to the editor of the BUILDING NEWS for the presentation of copies of that Journal.

Letters were read relating to the scale of professional charges sanctioned by the Association from the Birmingham Architectural Society and the London Architectural Association, to whom copies of the scale had been sent, in order that they might express their opinion upon them. The Birmingham Society suggested several alterations, while the London Association declined to offer any opinion upon the matter, a course which did not appear to meet with the approval of those present.

On the motion of Mr. T. MOORE, seconded by Mr. WILSON, a vote of thanks was accorded to the Birmingham Society for their courtesy in the matter.

Mr. AUSTIN (who officiated as Secretary in the absence of Mr. Oliver) read the annual report, of which the following is a summary:—

In presenting the third annual report your Committee congratulate the Association on the increase of its members and the extension of its influence. During the past year the accession to the Association has been two members, viz., Mr. William Hill, of Leeds, architect, and Mr. Thomas Bryson, town surveyor, of Newcastle-on-Tyne; and four Associate Members, viz., Mr. Hudson Reah, of Sunderland, and Messrs. J. Bryson, H. J. Austin, and T. Mitchell, of Newcastle-on-Tyne. In the death of Mr. Richard Grainger your Committee have to regret the loss of an honorary member, whose energies and abilities in giving to the town of Newcastle a truly architectural character, procured for himself a world-wide reputation. The annual excursion meeting was held on the 28th of August, 1861, at Ushaw College, where, under the guidance of Vice-Principal Gillow, the members had an opportunity of examining the various interesting works of art and of science for which the college is so celebrated. After partaking of the hospitality of the college, the members proceeded to Durham, and examined the restorations of the central tower of the cathedral and other antiquities. In reviewing the proceedings of the Association during the past year, the Committee refer with satisfaction to the opportunity which the formation of this Association has afforded to its members of taking successful action in the formation of a local scale of professional charges, and in furthering the establishment of an architectural alliance; of aiding the proper representation of the profession in the International Exhibition of 1862; and of expressing their opinions upon the subject of professional examination as inaugurated by the Royal Institute of British Architects. The finances of the Association continue in a satisfactory condition.

Mr. T. MOORE (Vice-President) then briefly addressed the meeting, giving a review of building progress during the past year, in the course of which he referred to the edifices recently completed or in course of erection in the town.

Mr. WILSON then read a paper on sanitary matters, in which he said, "There has been important evidence of the general recognition of sanitary science as a vital branch of the architectural profession in the fact of the Royal Institute of British Architects having, this session, set apart an evening for the reading of a paper 'On the Essentials of a Healthy Home,' by Mr. Roberts; and a second evening for a discussion upon the same subject. As both paper and discussion were printed in the *Building News and Builder*, I will not refer to them more than to say in the course of his remarks Mr. Godwin gave to sanitary work a new distich—

"To drain and pave
Means raise and save."

The subject has been more painfully brought before the public in the fear that has been expressed that the loss the nation has sustained in the death of the Prince Consort was attributable to defective sanitary arrangements at Windsor. Mr. Rawlinson has expressed an opinion that Windsor Castle was the soundest and most complete house, in its sanitary arrangements, in this country. From Windsor, Mr. Rawlinson was to proceed to an examination of Buckingham Palace, prior to an inspection of the other royal residences. Her Majesty has thus set her seal to the momentousness of the sanitary question. Another important fact has still more recently transpired. Dr. Brady has obtained from the legislature a special committee to inquire into the applicability of the sewage of towns for agricultural purposes. This is a proceeding that will lead to many experiments, and elicit much new information. I would say a few more words on the primary importance of a salubrious site. In the case of cottages, particularly, we too often see the back-yard, or back garden, with the midden, privy, over-flowing water-butts, and pig-stye in it, higher than the basement of the house. No art can prevent such places from being constantly damp: nor the persons who inhabit them from inhaling an imperceptible, but pernicious vapour, drawn from the damp without by the heat within. The cottages of hinds are often built on slopes below or against the cattle-sheds, and close to stagnant ponds, &c. I lately inspected a row of cottages occupying this unenviable site. The back walls of the cottages formed the back walls of the cattle-sheds; close before the doors of the cottages stood the double pig-styes of the hinds; and at the end of the row was the green still pond. In this arrangement the cattle had the best of it, being on the ridge of the slope—the percolations from the sheds making their way to the lowest lying point, the pond, beneath the flagging of the hinds' cots. Within the latter, the rafters were uncased, but hidden with calico; and the imperfect thatching permitted the rain to trickle freely down the walls, and to drip heavily in large tears, in different places upon the floors. If, by any unfortunate chance, there is no choice of a better site than one in similar immediate contiguity to cattle sheds, the soil should be covered with concrete before cottages are built upon it. In model villages, too, I have seen great mistakes in the choice of sites. Landed proprietors, anxious to improve their cottage property, have obtained excellent designs from first-class men; but these have been placed in the hands of the surveyor to the estate for execution, and sanitary requirements in the matter of sites have been altogether overlooked. I expect that our esteemed member, Mr. Watson, who has turned his attention particularly to farm buildings, will agree with me that it is better to build on a ridge, bleak though it be, than to obtain a partial shelter from the wind by building at the foot of a slope on a site subject, by the laws of gravitation, to percolation from soil, sheds, byres, styes, or middens. Lastly, I would refer, with congratulation, to the fact that Newcastle, within the last few weeks, has also consented to consider sanitary progress momentous; for I learn, with satisfaction, that a proposal has been made to expend £50,000 to improve the condition of the town."

Some discussion was elicited by the paper, in the course of which

Mr. THOMPSON said it was a most extraordinary thing that Newcastle, which stood in such an excellent natural position, should not have a better system of drainage than it possessed.

The CHAIRMAN pointed out that there were a great many of what were called "pot holes" in the town, in which the water collected and stood. Though Newcastle appeared to be an exceedingly easy town to drain, from the cause he had mentioned it was most difficult to drain it properly. The Chairman drew a section of some of the localities in the town, in which the peculiar configuration of surface he had alluded to was presented.

The votes for the election of officers for the ensuing year were then taken, with the following results:—President, Mr. Dobson; vice-president, Mr. Walker; hon. treasurer, Mr. Dunn; hon. secretary, Mr. Oliver; committee, Messrs. Austin, Howison, Kyle, Moore, and Pritchett.

Mr. PRITCHETT, in reference to the proposed alliance of architectural associations, said that according to the outline scheme there should be a meeting next June, and the other associations were waiting for him to fix the day. He suggested the third Tuesday in June as the most eligible, and thought this meeting should appoint two delegates to represent it at the associated meeting to be held in London.

Mr. Pritchett and Mr. Austin were appointed delegates.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting of this body was held on Monday; WILLIAM TITE, Esq., M.P., the President of the Institute, in the chair.

Mr. T. HAYTER LEWIS, hon. sec., read the minutes of proceedings at the last meeting, which were approved of and confirmed.

Mr. JAMES HELL, hon. sec., announced several donations, and a vote of thanks to the donors was passed.

The CHAIRMAN said there were before the meeting a number of curious drawings, of which two were on the easel right and left of the chair, and two were on the table. Those drawings were made by a very distinguished antiquary, to whom he was introduced in very early life—he was, in fact, almost a boy at the time. His name was John Carter, certainly the father of all the architectural reminiscences and restorations which had led to such important results at the present time. He was *par excellence* the reviver, lover, and restorer of Gothic architecture—(Hear, hear.) He published two very curious books, one applying to the Gothic architecture of England, and the other on the sculpture of England. He was a very remarkable man, and a man of singular habits and tastes. When a youth he (the Chairman) was taken by a friend to see John Carter, who was employed by the Society of Antiquaries, and completed some series of their works. One series of drawings of York Minster was very large and complete, and he thought they were published by the Society of Antiquaries in their book called *Monumenta Etrusca*. One of the drawings showed Gothic architecture in its pristine excellence and beauty, and another showed Gothic architecture as struck down by the Reformation. Carter was an enthusiastic Roman Catholic. He was a very remarkable man, and the drawings exhibited that evening were very remarkable and beautiful drawings. He (the Chairman) thought it was forty years ago since he saw those same drawings in Carter's parlour. Carter was a most enthusiastic musician, and a most charming companion; he had no liking for publishers, and brought out one of his books without the intervention of any bookseller or publisher. One of his drawings was meant to represent the death of Richard II. At Brighton, the other day, he saw the four drawings referred to in the possession of Mr. Ambrassoni, of that town, and knowing them, asked that gentleman (whom he hoped was present) to be kind enough to send them there that night, so that those who were enthusiastic in Gothic architecture now might see what had been done in former days by John Carter—(Hear, hear.) He thought the four drawings were curious ones in the history of architecture, and was of opinion they would be found well worthy of their examination and of their appreciation.

Mr. M. DIGNY WYATT said he saw the drawings a few years ago in Bond-street, and he thought that if their funds were in a more flourishing condition it would be desirable to secure them so that they might be hung up on the walls of the Institute.

Mr. G. E. STREET suggested whether it would not be well to have a special subscription for the purpose of securing for the Institute possession of the drawings. It was a question whether they were not more indebted to Carter than to Pugin in reference to the revival of Gothic architecture. He thought it would be a very desirable thing for the Institute to secure possession of the drawings.

The CHAIRMAN said the money asked for the drawings by Mr. Ambrassoni was not very enormous or unreasonable. If it were the feeling of the meeting to leave it to the Council to purchase the drawings, he should be glad to lead a subscription for that purpose, as he thought the drawings were very elaborate and curious ones, and he should like to see them on the walls of the Institute. But whether they bought them or not, he was sure they were all very much obliged to Mr. Ambrassoni for sending them there that evening.—(Hear, hear.)

A MEMBER asked if the Council had received any communication respecting the proposal to lend the Soane Museum to the Great Exhibition. He had a copy of the Bill on the subject now before Parliament, from which he rather thought a question might arise, whether the lending of the collection to the Great Exhibition would not be virtually giving it to the South Kensington Museum. The Bill was encouraged and promoted by those who wished for the entire removal of the Soane Museum to South Kensington.

The CHAIRMAN said the matter was very easily explained, as he had the honour of being a trustee of the Soane Museum. A wish had been expressed to have all the works of Hogarth assembled together in the National Museum. Before he became a trustee, the trustees of the Soane Museum were asked to grant a loan of the Hogarth pictures there, and they said it was not in their power to part with those pictures, or, under any circumstances, to permit them to be removed. The Bill referred to was brought in for the nonce, and the object of that Bill, of which the trustees had no notice at all, was to transfer the pictures to the National Museum. He was quite sure the feeling of the trustees was not to let the Soane Museum be shifted by any side wind, or in any other way. He dared say the Bill would be read a first time in the morning, and if he were in the House he should take occasion to say that the trustees only meant to assist a great national object, a great national purpose, that of having assembled a complete collection of Hogarth's pictures. He should not forget the subject.

The *Leonine City*—Vatican.—The Rev. R. BURGESS, B.D., honorary

member, then read a paper entitled "On the Leonine City, Vatican," which was illustrated by a large map and some drawings.

The CHAIRMAN invited the remarks of gentlemen present on the very interesting paper which had been read. It was not possible to add anything to the information which the lecturer had given, but they might certainly desire to have his wish carried out in the fixing of a defined city for the Popes which he had pointed out, so that thus a *questio vexata* might be settled for the benefit of this generation and posterity. As to the masonry which had been referred to by the lecturer, he was always struck with the singular mechanical accuracy of the Roman buildings. In their masonry was uniformly found what architects called breaking joint accurately, and that was particularly the case with their brickwork. He never saw Roman brickwork in London, in England, or in Paris, in which that marked accuracy was not observed; that was the strict breaking of joint. Another peculiarity was the enormous thickness of the mortar-joint in brickwork, which was nearly as thick as the brick itself. There was connected with this matter a peculiarity of interest to architects and builders. If the bricks were good and the mortar good, nothing was so bad as the heedless way in which they were sometimes put together. It had always struck him that care should be taken in the workmanship, in placing bricks and jointing, to have them properly placed. As to the attacks upon Rome referred to by the lecturer, it was singular that both the great assaults, that made by Constable Bourbon and the late one of 1848, occurred pretty nearly at the same point. The attack made by the Constable Bourbon was well described by Guiccardini, and the account showed the barbarity with which Rome was attacked and sacked at that time. The assault on the city was made from the same side in both instances.

Mr. M. DIGBY WYATT referred to the connection between the Saxons and the city of Rome, and remarked that he thought anything which at all tended to illustrate the connection between Saxon pilgrims and the early Popes showed the natural process of the extension of the arts of ancient Rome by bringing a knowledge of them to the people of Northern Europe. He next referred to the great fresco at the old front of the basilica of St. Peter's, in which all architects must feel a profound interest. Of course they must remember the Lateran Palace was originally the great house of the Popes, after which the great work of the Vatican was commenced. Through the taste of the Medici and the Etruscan princes the foundation of the museum at the Vatican was laid. And they must all know that the Vatican Library contained treasures of art, beauty, illustrations of history and art, which was a great source from which fresh light might come to us of the history of men, of manners, of literature, and other things. He hoped that those treasures of art would be more freely unlocked. He was sure they were all much indebted to Mr. Burgess for his paper, and he proposed a vote of thanks to him.

The Rev. R. BURGESS, in acknowledging the compliment, suggested that Mr. Digby Wyatt should, on a future occasion, favour the Institute with a paper on the treasures of the Vatican.

The meeting then separated.

CAMBRIDGE ARCHITECTURAL SOCIETY.

THE fourth meeting of the session of the Cambridge Architectural Society was held on Thursday last, in the Philosophical Society rooms. C. C. COOPER, Esq., in the chair, when the Rev. G. Williams read Dr. Pierotti's paper on "The Tombs of Palestine."

The paper commenced with an explanation of Rachel's Tomb, of which a ground plan and other drawings were given. He entered fully into the question of its age and other particulars. He then spoke of the Mosque of Hebron, which is built over the Cave of Macphelah, and contains the tombs of Abraham and Sarah, of Isaac and Rebecca, and Jacob and Leah, and also a sarcophagus of Joseph, though Joseph was not buried there. He gave an account of his investigations concerning the subterranean caves, and explained how far he had been able to carry them on and the causes of difficulty connected with it. He then proceeded to speak of the tomb of Joseph, now held in great veneration both by the Jews and Moslems. After discussing the position, &c., of the tomb of Samuel, he spoke of the tomb of David on Mount Zion, and refuted the theory of David's sepulchre being the "Tomb of the Kings to the north of the city." He then gave an account of the Sepulchre of Our Lord, and traced the walls of the ancient city, showing how this was without the walls. He explained it with plans and sections of its present state, and its supposed original condition. He also entered into the question at issue between Mr. Fergusson and other antiquarians who have studied the topography of Jerusalem, explaining carefully the points of difference. After speaking of the tombs of Abraham, Jehoshaphat, Zachariah, &c., he concluded the paper with some general remarks on the subject, and said he was influenced in all his remarks by a desire to discover truth, and not to support one party or another who had written on the question.

After a pause, Mr. Williams rose to give an explanation of his views on the subject, and said that he hoped, eventually, he and Dr. Pierotti would agree more nearly, but he at present did not want to enter much into the controversy with him as he is going to publish his views, and he thought it better not to discuss the subject until he had done so.

MISSION CHURCH, WESTLEIGH MILL, LANCASHIRE.

THIS church, just erected under the auspices of the Vicar of Leigh, near Bolton-le-Moors, Lancashire, is intended to be used as a school during week days and as a mission church on Sundays. It comprises a nave, about 20 feet wide, of which only a portion is at present completed; transepts about 20 feet square, with boys' and girls' porches attached, and a chancel 30 feet by 20 feet. On the north side of the building are a small sacristy and a class-room or library.

The walls, both externally and internally, are of the red brick of the locality, relieved with bands, cornices, and alternated voussoirs of straw-coloured firebrick and blue headers, sparingly introduced. The roofs, which are open to the ridges internally, are covered with blue Bangor slates of the smallest size, into which are worked diaper and other patterns of green and purple Velineli slate, the ridges being of blue Staffordshire tile. All the works have been separately executed by local tradesmen, from the designs and under the direction of Messrs. Hayley and Son, architects, of Manchester.

INSTITUTION OF NAVAL ARCHITECTS.

AT the meeting of this Institution on the 27th ult., Captain FORD read a paper on the Manufacture of Iron Armour Plates, a portion of which (we have not space for the entire paper) may be usefully recorded in our pages.

The subject of the best method of manufacturing the armour plates was first brought under the consideration of the writer when the Thames Ironworks Company received the order for building the *Warrior*, and it became a question with the firm whether they should erect steam hammers for the purpose of forging, or increase the power of their mills for rolling the plates.

At that period, after careful consideration, the conclusion was adopted that the plan of hammering would produce the best results, and subsequent experience has, in the opinion of the writer, fully borne out that view.

Two qualities in the iron appear to be of prime necessity—toughness and solidity. If the iron is hard and brittle, it is easily cracked and broken by the shot; if unsound, either from blisters or lamination arising from imperfect welding, the power of resistance is proportionately diminished. It has been conclusively proved that any given thickness of iron, if composed of layers of thin plates, has very little resisting power in comparison with the same thickness of solid plate, and a plate apparently solid, but imperfectly welded, exhibits the same weakness.

The process of rolling plates $4\frac{1}{2}$ inches thick has been described by the head of the eminent firm of Messrs. Brown and Co., of Sheffield, in a paper read by him at the Institution of Mechanical Engineers, Birmingham, as follows:—

"Bars 12 inches broad, 1 inch thick, are first rolled; five of these are then piled and rolled into a rough slab; two of these slabs are rolled into a plate $1\frac{1}{2}$ inch thick; four of these plates are then piled and rolled into a plate $2\frac{1}{2}$ inches thick; and, finally, four of these $2\frac{1}{2}$ -inch plates are piled and rolled into the finished plate."

The hammered plates manufactured at the Thames Ironworks are made in the following manner:—Scrap iron of the best description is carefully selected and cleaned, piled, hammered into a bloom, and then rolled into bars 6 inches broad, 1 inch thick; these bars are cut up, piled, and again hammered into a slab; several of these slabs are put together, heated, and hammered to the form required, and this process being repeated, the plate goes on gradually increasing to the length required.

In the manufacture of the best hammered plates there is no mystery; it depends simply on the selection of the best material, and the employment of the most skilled and careful workmanship.

The writer confidently believes that scrap iron, rolled and hammered as before described, is decidedly the best material, and superior to any description of the puddled iron from which all the rolled plates are understood to be made. That the toughness of iron is dependent greatly upon the amount of working it undergoes cannot be doubted. This working has already been given to a great extent to scrap iron, and the process of rolling it into the 6-inch bars, which are the raw material of the future plate, gives it a degree of toughness and fibre which it appears to retain through all the subsequent heating and hammering.

The tendency of hammering to harden does not take away this toughness, and the process of annealing restores much of what is lost. Numerous experiments on single plates which have been fired at, and close observation in the drilling, planing, and bending of the large quantities of plates which have been hammered in this manner, have shown that the brittleness which has been attributed to hammered iron is entirely avoided, and that the toughness of the iron is superior to that of the best rolled plates which have hitherto been produced. Solidity and freedom from blisters or lamination is unquestionably more certain in the hammering process; and when it is considered that to produce a rolled plate sixty thicknesses of iron must be perfectly welded at every point throughout the finished plate, under penalty of there being lamination, the frequent occurrence of this evil would seem to be inevitable; the presence of dirt between any two layers, or the failure to reach a welding heat in any part of the centre of the large masses which have to be dealt with, being certain to produce this fatal result.

It must also be remembered that as the hammered plate is gradually built up of the slabs before described, a comparatively small portion of the mass requires to be placed in the furnace and heated at one time, while in the rolled plate the final pile, 10 inches in thickness, and weighing six or seven tons, must be brought to a welding heat at once, and the operation of welding completed before this heat is lost. To obtain this heat throughout the mass without burning the edges most exposed to the fire can hardly be counted upon as a uniform result, and when this has been accomplished, any delay in dragging it from the furnace, getting it to the rolls, forcing it between them, and completing the rolling process, will spoil it, and the loss, even of a few moments, may be fatal to the success of the operation.

These difficulties, of course, increase with the thickness and weight of the plates; the foregoing observations are made with reference to plates $4\frac{1}{2}$ inches thick; but when the thickness of the plates is increased to $5\frac{1}{2}$ inches, it may well be doubted if these difficulties can be successfully overcome in the rolling process.

The attempt has recently been made to effect a combination of the two processes of hammering and rolling; the slab, 10 inches, or thereabouts, in thickness, being forged under the hammer, then heated *en masse*, and rolled in the same manner as the pile, forming the final process described for the rolled plate. To this the writer objects that this plan involves the serious difficulties already adverted to as consequent on the heating and rolling of so large a mass. Thus far experiment confirms this opinion, as the plates manufactured in this manner have proved under trial greatly inferior both to the rolled plates and those hammered at the Thames Ironworks.

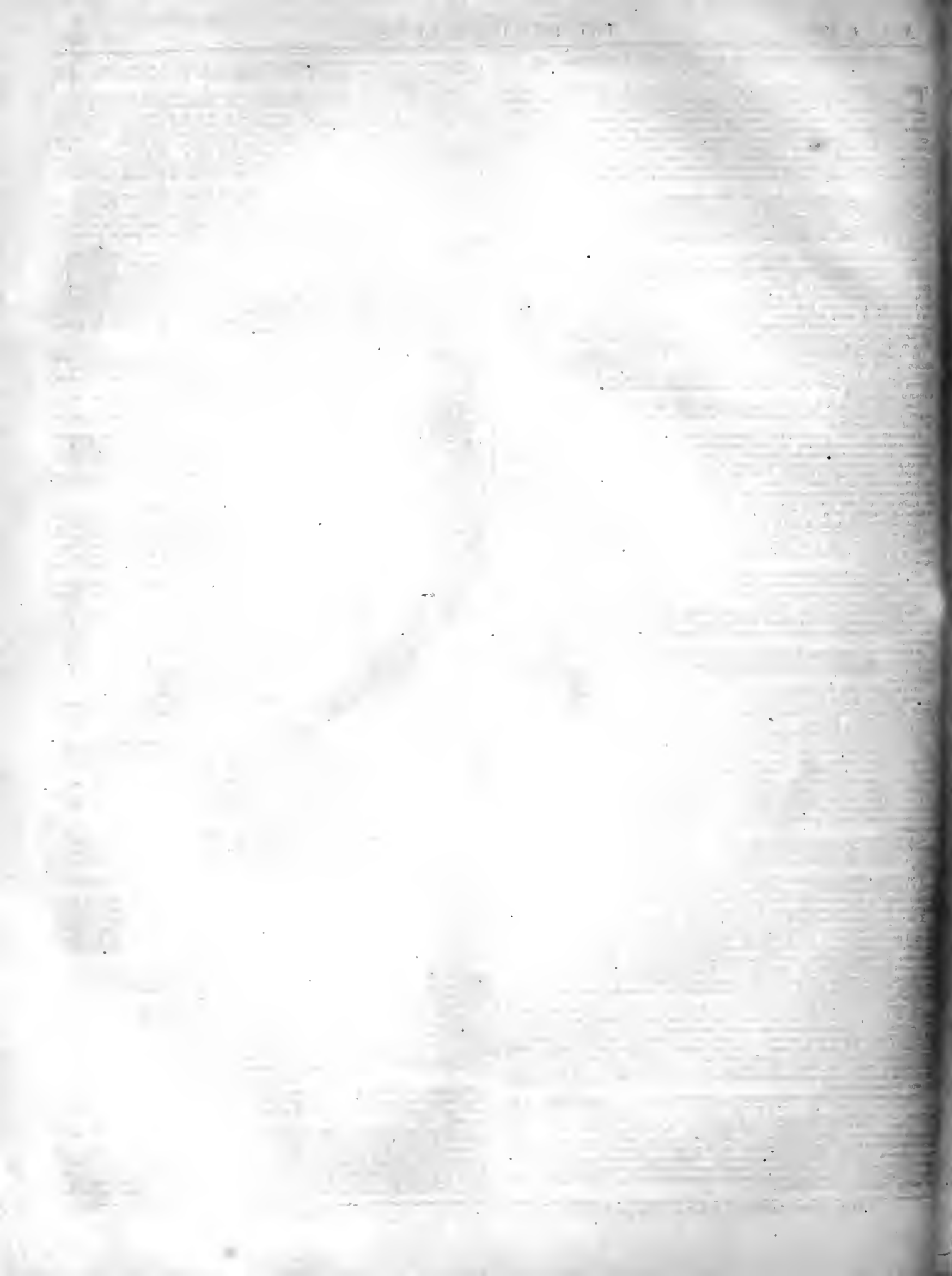
In the minor qualities of smoothness of surface and uniformity of thickness, it may be observed that the hammered plates are quite equal to the rolled, and, with respect to cost of production up to the thickness of $4\frac{1}{2}$ inches, the market price of hammered and rolled plates is the same; but, if the thickness and weight be increased, the cost of rolling will, without doubt, be seriously enhanced, while that of hammering will remain but little, if at all, altered.

NORTH OF IRELAND ARCHITECTURAL ASSOCIATION.—According to the *Dublin Builder* it is proposed to establish an institute, under the title of "The Ulster Architectural Association."

The *Engineer* notes that those taking an interest in the "smoke nuisance" question may now, almost any day, see the principal chimney of the Houses of Parliament belching forth dense volumes of smoke.



MISSION CHURCH, WESTLEIGH MILL, LANCASHIRE.—MESSRS. HATLEY AND SON, ARCHITECTS.



ON THE SEWERING OF TOWNS AND DRAINING OF HOUSES.*

THE first questions an engineer should ask himself with respect to any district or area to be sewered should be these—"How have surface waters passed off up to this time without the aid of sewers or drains? Have any surface impediments been formed; if so, what are the effects, and can such impediments be removed?" "Have houses been erected and cellars excavated in improper places, and where injurious flooding cannot be prevented excepting at a ruinous cost to the rate property of the district generally?" "Can water-courses in the valley lines be deepened at a moderate cost?" and, "Can embanking and pumping be resorted to economically?" "Are there any mills and mill-dams which impede drainage and cause injurious subsoil flooding regularly, and injurious flooding at intervals?" All these questions have a most important bearing on the dimensions of sewers.

It may look very egotistical, but I can better give an account of my own practice than that of any other person, and detail my own experience more confidently than stereotype it in tables, which must, in such form, be misleading and injurious.

Natural streams down valley lines should never be converted into sewers. The maximum flow of water in such streams is to the minimum as three hundred or four hundred to one.

Any sewer formed in such valley line of sufficient capacity to carry off flood waters, would be much larger than requisite for the ordinary flow, and would become a cause of nuisance in dry weather. All valley lines should be improved, and the beds of natural streams should be preserved free and open for the escape of surface and flood waters. Sewers and drains should be of sufficient capacity to remove roof, yard, street, soil, subsoil, and slop-water from the area drained during ordinary weather, and should be graduated to the amount of work to be done. Flood-water outlets or overflows into valley lines, or natural streams, to relieve the sewers during heavy rains, should be provided. There may be large gratings to remove surface storm waters at the outlet points of valley lines, but care must be taken not to make such places large stagnant cesspits.

All sewers and drains should be properly ventilated. This may be effected by connecting down-spouts with house-drains in proper situations; by connecting sewers with tall chimneys; or by providing, in the sewers and drains, ventilating shafts with charcoal filters for oxidising sewer gases. All sewers should have means of inspection, flushing, and cleansing provided.

Sewers should be laid out in straight lines, and with regular gradients. At each alternate change in direction, or alteration of gradient, a manhole or entrance to the sewer should be constructed.

Agricultural drain tiles are laid in straight lines. Ploughing, on the most approved plan, is also in straight lines. In both cases truth and efficiency of workmanship are attained, and straight sewers and drains insure good workmanship. One defective link breaks the chain; one defective pipe-joint or yard of sewer is injurious.

Brick sewers should be formed of radiated bricks, set in hydraulic mortar. Pipes should be jointed with clay puddle, or with cement or mortar, or asphalt, according to the nature of the ground in which the pipes are laid. Great care should be taken in laying pipes in rock, in gravel, and also in clay. Many lines of sewer pipes are injured by injudicious filling of a trench, or by a fall of clay or earth crushing the pipes.

The inlets of all drains should be properly protected, and the openings should be reduced so that any substance entering the drain may pass freely into the main sewer.

Where a sewer or drain has once choked, and the ground is opened out for repairs, do not close it in again, but construct a manhole or lamp-hole, that any future obstruction may be removed at once.

Sewers and drains act as subsoil drains to the full depth at which they are laid. In wet subsoils provisions should be made for allowing subsoil water to enter the sewers. A continuous flow of subsoil water along sewer or drain is generally an advantage, as the solids of sewage are more readily removed.

Nether sewers nor drains should be laid under new inhabited dwellings. If it be absolutely necessary to carry a drain under a house, the drain should be carefully laid, and the joints made perfectly tight, so as to prevent the escape of sewer gases into the adjoining subsoil.

Many lines of earthenware pipe sewers and drains are ruined when laid in porous subsoils with leaking joints. The fluid sewage leaks away, and leaves the solids to accumulate and ultimately to choke the sewer or drain, as the case may be. Puddle should be used in such cases.

All junctions with main sewers should be made at a point above the ordinary water-level in such sewers, and at the junction of branch or main sewers the top of the sewers should be on the same level. Additional fall should be given at junctions or bends, to overcome increased friction. Junction entrances, provided for branch sewers and house drainage, should be protected by earthenware plates, or "disc-plugs."

Street gullies should be small, compact, and double-trapped. There should be a sediment-box, easily removed and easily replaced. Means of flushing should be provided in the gully, that choking of the pipe connection with the sewer may be impossible. Large cesspit gullies are a nuisance. Small gullies of cast iron are generally found the cheapest and best; increase the number of small gullies rather than construct large cesspit gullies.

Fresh sewage, when properly diluted, filtered, or disinfected, may be passed into rivers, or into the sea, without causing nuisance or injury to fish. In arranging outlet sewers provision should be made for applying the sewage to land in the immediate neighbourhood for agricultural uses by gravitation if practicable. Pumping by steam or other power is available.

A town standing on ground having quick gradients requires special arrangements to break the rush of water down and of gases up. This can be done by breaking the line with a vertical fall, placing a flap over the mouth of the sewer, and ventilating at this point.

The outlet ends of all sewers should be protected with a covering flap, to prevent the wind blowing in and driving back sewage gases. A cast-iron pipe of comparatively small dimensions on any river outlet sewer will pass the dry weather flow of sewage to and below summer level of the river, so as not to be a nuisance.

The cost of town sewerage works is an important matter; and as continental governments look to England, and especially to the British metropolis, it is only right that they should have some sort of rule to judge by. In my experience I find that towns of and below 30,000 of population may have complete sewerage at or below one pound sterling per head. Where a population is compacted into a small area, and means of outlet are not distant, as in the cities on the Rhine, the estimate of one pound sterling may be relied on. But large brick sewers, for men to walk and work in, must not be constructed. The sewers must be of small sectional area, and so arranged that they may be cleansed absolutely and perfectly without sending men in and through them.

All rivers and streams are natural outlets for drainage, and since men have dwelt on the banks of rivers, surface refuse has been allowed to pass into and mingle with the waters. There is at present a great outcry against the pollution of rivers by sewers, and the killing of fish. The questions may be asked, "Whether is it better to pollute rivers, or towns and houses; to kill fish, or to kill men?" I do not advocate the pollution of rivers, but the application of sewage to land for agricultural uses. If it will not pay, in some cases, as a commercial speculation, make it compulsory, and pay the cost by rate. By far the most expensive process in any community is filth in cesspools beneath houses, or on the surface around human dwellings.

Proper sewers and drains deliver sewage at the outfall fresh, and in this state fish are not killed, but are fed. The putrid sewage flushed from the foul sewers of the metropolis during hot weather by a thunderstorm taints the river and poisons fish; but even in the hot summer of 1859 the mortality in London was low, although the Thames was foul. As cesspools have been abolished, the public health has improved; and if all the sewers were of sectional dimensions, forms, and gradients (as they may be) to transmit fresh sewage, and not retain it until putrefaction sets in, the public health would be further improved. It is practicable to so improve and manage the public sewers of this metropolis, that sewage one day old shall not remain, but shall be in motion towards some outlet; and in motion there is safety, but danger in stagnation.

* By Mr. ROBERT RAWLINSON, C.E., F.G.S. See page 221, ante.

The full and proper ventilation of sewers and drains is of the utmost importance; drains should be so laid and arranged as to render contamination of the air within houses (by sewage gases) impossible.

At present, the sewers of the metropolis, with exceptions in the City, as recorded by Dr. Letheby and Mr. Haywood, ventilate, for the most part, direct to the open air, by means of the vertical shaft from the crown of the sewer. The gases of decomposition rise direct out, and road dirt, stones, and grit fall in. The gases foul the air in the street, and the dirt, ground by traffic through the open grates blocks the invert of the sewers. The proper way to ventilate is to form a side-chamber, or side-shaft, and to place charcoal in the passage of communication from the vertical shaft by the side-chamber, so that all the gas escaping may be oxidised. The side-chamber receives the dirt falling through the ventilating-grate; it cannot enter the sewers. House-drains may also be ventilated in a similar manner.

Dr. Stenhouse pointed out the true uses of charcoal in 1853. I commenced the use of charcoal for sewer ventilation about the year 1858; and Dr. Letheby and Mr. Haywood commenced their elaborate and valuable experiments also in 1858.* I think I may claim to have been one of the first, if not absolutely the first, to apply the use of charcoal for disinfecting the sewage gases of an entire town, upon a general plan, as part of a sewerage system. I may instance Worksp, Buxton, and West Ham.

Cesspools may be ventilated through charcoal with advantage, where they cannot be abolished entirely, which is the only safe remedy. At the County Hospital, Winchester, a large cesspool, about 8 feet in diameter, is ventilated through a covering of charcoal. The arch covering of the cesspool was removed; a wire-work basket, supported on iron framework, covers the entire area of the cesspool, and this is filled with charcoal, broken fine (like peas), to a depth of twelve inches. There is a roof over the charcoal to prevent its being wetted by rain, and the whole is walled in so as to leave a clear passage round. It is reported to answer fully—there is certainly no nuisance from cesspool gases at this point.

The following are details of sewerage works executed:—

CARLISLE.

The "drainage area" of the district sewered is 1,930 statute acres. The main outlet sewer for the entire area is 3 feet 9 inches by 2 feet 6 inches. The sewer is laid with a gradient of 1 in 700. The outlet is extended to the centre of the river Eden, so as to deliver the sewage into the water of the river in the driest weather.

The main sewer, and the low-lying portions of the city, may be relieved by flood outlets, of the drainage of 1,930 statute acres.

The surface was most carefully considered, and all available means were used to prevent damage or inconvenience from local storms and flood-waters.

The main sewers and secondary branches are built of bricks, moulded to the sectional form required for each sewer, and set in engine-ground hydraulic mortar. Cast-iron pipes were used in crossing under rivers and watercourses, and for the main low-water outlet.

Flushing-valves or sluices are provided, and from a flushing-chamber in English-street (the highest part of the city), the sewers in twenty-eight streets in every direction may be flushed.

The sewers are designed to remove all sewage refuse without pumping. This will be accomplished completely at all ordinary times. An extraordinary flow may block the outlet, and a long-continued rain may then, for a short time, fill the lower sewers, simply because the surface waters impede all action; at such time the largest sewers would be filled, and, for a time, their delivery would be impeded. There have been heavy floods in the district since the completion of the works as any previously recorded, causing no injury to the sewers. There has been local flooding, but no one blames the sewers as the cause. The total cost was £23,310 6s. 7d.

Rateable value £60,378 7 9 } Annual rate in the pound required to repay principal and interest in thirty years, 6d.

Number of houses about 6,838 }
The cost of draining "self-contained houses, including one water-closet, was about £6 2 1
The same, without a water-closet, about 5 6 4
The cost of draining "tenement houses" with one water-closet for each house, taken on an average of seventy-one tenements, was, per tenement 1 6 7
The cost of draining "tenement houses" without water-closets, taken on an average of sixty-six tenements, was, per tenement 1 10 0

Where a water-closet has not been used, a cesspit has been drained, and the drain is laid at a greater depth, involving larger cost. Where a water-closet has been used, the cesspit has been filled up.

WORKSP.

The outlet-works consist of six trenches, about 200 feet long, three feet deep, and eighteen inches wide at the bottom, with side slopes of one to one. These trenches are provided with sluice arrangements at each end, to allow of the sewage being diverted as may be required, either for cleansing the trenches or for other purposes.

At the termination of the outlet-sewer provision has been made for passing limewater, or other disinfecting fluid, into the sewage, and moveable screens, for intercepting solid matter, have been placed in the trenches. Two outlets for filtered sewage-water are provided into the river Rytton.

The area sewered is about 400 statute acres.

The sewer from Bridge-street to opposite Beaver-place is of brick, egg-shaped, 2 ft. 3 in. by 1 ft. 6 in. At the termination of the brick sewer an overflow into the river Rytton is provided, and from this point to the outlet works the sewer is formed of 15-inch earthenware pipes, cast-iron pipes of the same diameter being laid across the river and mill stream. The outlet sewer has a fall of 1 in 600. This outlet serves for the entire district.

The sewers are formed principally of stoneware pipes of 15, 12, and 9 inches diameter, and the ventilating shafts are fitted with charcoal filters.

The site on which Worksp is built presents several natural and artificial difficulties to cheap sewerage works. The valley is flat and liable to rain-floods; the river had to be crossed several times, as also the canal on one side, and the canal feeder on the other. The outlet works are simple in plan and economical in cost. Expensive tanks have been avoided, and the cheapest, but most effectual, means for intercepting and removing any solid, flocculent, or discolouring matter have been adopted. The experience of two summers has shown that these works are efficient.

The proper place for liquid sewage, however, is the land, and the best filter is vegetable soil under full cultivation; but when the sewage is so used at Worksp, the existing outlet works will be necessary, as it is advisable to intercept any floating solids and to irrigate with the fluid above.

The entire of the sewage of Worksp may be carried on and over the land below the outlet works very cheaply, by contour conduits, and be distributed by surface irrigation. A small outlay on such works, and intelligent management in irrigating and growing appropriate grasses, will prove beneficial to the farmer.

The entire system of sewers in Worksp is fully ventilated by special arrangements for this purpose at 51 places, and these include all upper ends of sewers. The estimated cost of the works was £6,000; the actual cost, including all contingencies, was £5,871.

BUXTON.

Two outlets for sewage have been formed into the river Wye; one near Wye-bridge, and the other opposite Duke's-drive. The outlet sewers are so arranged with regard to levels as to allow of the whole of the sewage being applied, by gravitation, in irrigating the land in the valley of the Wye.

The district for sewerage purposes has been divided into two "drainage areas," the main sewer for each sub-district being formed of 15-inch stoneware pipes.

In many portions of the town the sewer excavations were made, wholly or partially, in limestone rock. In such cases the trenches were excavated six inches below the proposed level of the sewer, and a properly prepared bed was formed for the pipes by filling in the trench with clay, gravel, or sifted earth. Manholes and lamp-holes have been provided at all the changes of direction or alteration in gradient of the sewers. Flushing chambers

* See page 180, ante.

have been constructed at the upper ends of the sewers, and provision has also been made for flushing from the baths and from the river.

The sewers from "High Buxton" have gradients of about 1 in 10. Overflows into the river Wye, for relieving the sewers during heavy rains, have been formed at river crossings and other suitable points. Ample means have been provided for ventilating the sewers by about thirty shafts furnished with charcoal filters.

My estimate for the public sewerage works of the district was £3,203. The actual cost of the works as carried out was £3,107 ds. 10d.

ALNWICK.

The cost of house drainage works necessarily depends, in a great measure, upon the position of the premises drained with regard to the main sewer; the length of drains required, the depth at which they are laid, and the character of the subsoil.

The following particulars are given as the average cost of house drainage works in the towns named:—

Houses of £40 rental, with one watercloset, cost about	£15	3	3
Houses of £15 rental, with one watercloset, cost about	7	11	1
Houses of £7 rental, with one watercloset, cost about	5	4	4

The length of drain to each house in Alnwick, taken on an average of 516 houses, is 25½ yards.

WIGAN.

Mr. John Law Hunter, borough surveyor, has given me the following information as to drainage in Wigan:—

The average cost of draining cottages of about £3 or £4 rental, has been at an average of	£1	1	0
Ditto ditto £7 or £8 rental	1	11	0
Ditto ditto £14 or £15 rental	1	13	6

4,228 houses have been drained at a total cost of £8,796 19s. 10d., or an average cost per house of £2 1s. 4d.

In draining 4,228 houses, 36,960 lineal yards of earthenware pipes have been used, being an average of 8½ yards per house. The earthenware pipes used are from 9 inches to 4 inches internal diameter.

Many of the drains have been in use several years, and there have not been any complaints of choking or stoppages.

Waterclosets are not in general use in Wigan, but cesspits, yards, stables, and house sinks are drained. A general use of earthenware pipe drains prevents rats living in the sewers and drains. They have neither food nor means of shelter.

The author then gave a description of the sewerage works at West Ham, already noticed in the BUILDING NEWS.

The following list of loans, sanctioned under the Public Health Act (1848) and the Local Government Act (1858), will show to some extent the progress that has been made in carrying out sanitary works in England during the last twelve years:—

1850 15th June to 31st Decemb	£	41,665	0	0
1851 1st January to 31st Decemb	103,706	0	0	
1852 " " "	246,470	0	0	
1853 " " "	500,740	0	0	
1854 " " "	599,893	0	0	
1855 " " "	424,126	6	3	
1856 " " "	522,703	16	5	
1857 " " "	312,612	11	0	
1858 " " 1st September	204,261	13	0	

£2,956,178 6 8

Amount of loans sanctioned under the Local Government Act:—

1858, 1st September to 12th August, 1859	£260,905	13	0
1859, 12th August to 21st August, 1860	280,259	7	4
1860, 21st August to 1st August, 1861	356,192	0	0
1861, 1st August to 1st March, 1862	129,998	0	0

£1,027,355 0 4

£2,956,178 6 8

£1,027,355 0 4

£3,983,533 7 0

This amount has been borrowed by 178 towns or districts.

Improvement in social and in sanitary matters has made rapid progress of late. Within the last half century land drainage and town sewerage have ripened into sciences. From rude beginnings, insignificant in extent, and often injurious in their effects, they have become of the first importance. The introduction of machinery to make land drain pipes and town sewerage pipes, gave a forward movement to civilisation. Land, by judicious draining and improved cultivation, is frequently doubled in value, and town sewerage, with other social regulations, frequently prolong human life from 5 to 50 per cent. as compared with previous rates in the same districts, and, within my own knowledge, house property throughout a whole town is reputed to have been increased 25 per cent. in value by such works. Agues and typhoid fevers are reduced or entirely banished. John Howard, by his labours, has shown to the world what could be done for gnats and for criminals; Edwin Chadwick for town sewerage, and Florence Nightingale for camps, barracks, and hospitals.

With respect to the beneficial effects of sanitary measures, we may read the remarks by Sir G. C. Lewis, in moving the Army Estimates. He said, "There have been a large number of improvements introduced for the purpose of bettering the moral and sanitary condition of the private soldier. In the first place, there has been a great improvement in barracks; and I am happy to say that these improvements in barracks have not been unattended with important results. I will read for the Committee some statistical returns, which I believe to be authentic, and will show a marked improvement as regards the rate of mortality in the army. The returns are taken for two periods for an average of six years—1830-36, and 1854-60, giving the number per thousand. The annual mortality of the household cavalry from 1830 to 1836 was at the rate of 14 per 1,000; in the latter period it was only 5 per 1,000. In other cavalry it was at the first period 15 per 1,000; in the latter only 6 per 1,000. Royal Artillery, 15 per 1,000 in the first period; in the latter only 7 per 1,000. Foot guards, 21 per 1,000 in the former period; and only 9 in the latter. The infantry of the line, 17 per 1,000 in the former period; and only 8 per 1,000 in the latter. The returns for the Colonies, of all forces, for the same periods, showed that for the former—namely, from 1830 to 1836—the mortality at Gibraltar was 22 per 1,000; but in the latter period only 9. Malta showed a diminution from 18 to 14 per 1,000; Ionian Islands, from 27 to 9 per 1,000; Bermuda, 35 to 11 per 1,000; Canada, 20 to 10 per 1,000; Jamaica, from 128 to 17; Ceylon, from 74 to 27. These are great results, and they are owing to the changes made in the sanitary condition of the army."

Since the year 1840 great and beneficial sanitary improvements have been effected in English towns. An annual mortality of 44 in the 1,000 has been reduced to 27, and 30 to 20, and even as low as 15. Human life has more value in England than in any other country in the world, entirely due to better sanitary arrangements.

It has been said, "as are the people so will be the government," but my experience leads me to the conclusion that bad government necessarily makes a bad people. Temptation is the parent of vice, and opportunity the broad road leading to destruction. A little leaven of evil leavens the whole mass. Lord Shaftesbury, through the entire of his most valuable life, has appreciated the facts stated, and has devoted himself to teaching, by example and by precept, to preventing as well as to reforming. His "Common Lodging Houses Act" has probably done more good than any other law of modern times, by removing temptation, and, therefore, preventing evil. Before the passing of this act there was no check to vice in its most disgusting forms. I only indicate that which I have seen, and cannot, consistently with the decencies of society, openly describe. I can only say that our civilisation resembled those volcanic regions where the internal fires of destruction made the earth

tremble beneath the feet of the dwellers on the treacherous surface—a sudden outbreak might at any time take place, and overwhelm all in ruin.

Social improvement must begin in the upper circles of society, that it may descend in precept and be enforced by example. Our own good Queen Victoria understands this. The great and wise Prince we have recently lost, and whom we so deeply mourn, fully understood this. The deep-thinking, far-seeing ruler, who sits on the Imperial throne of France, appreciates the fact. In the International Exhibition of 1851 the model cottages of Prince Albert probably worked more human good, by encouraging home improvements, than all the glitter of precious stones, the wealth of jewellery, and the subtle refinements of art. The poor are utterly powerless to help themselves in matters of sanitary improvement. They cannot build their own houses, but must inhabit such as are provided by others. They cannot make the laws, neither can they administer such laws as are made. If the laws are wise they receive the benefits; if otherwise, they suffer. Social science, as it is termed, must be administered by the State, and this Lord Brougham fully understands. It will be an evil day for society when Government divests itself of all executive power in social and sanitary matters. Freedom is a glorious thing, but license to imitate and work evil against the general body of society for private gain, is neither a safe nor a desirable state of freedom. A state which can tolerate cesspools, beerhouses, gin palaces, and can license dancing saloons, must bear with vice, crime, lunacy, and pauperism in excess.

Wise imperial laws are required, and honest and intellectual administration nationally and locally to secure sanitary progress, and the greatest amount of political contentment, commercial prosperity, health and social comfort to a nation.

Some tables were given, containing details of cost and other particulars of several executed sewerage works; to these we must return at a future time.

ARCHITECTURAL ASSOCIATION.

THE usual fortnightly meeting of this body was held at the Rooms, 9, Conduit-street, Regent-street, on Friday evening; Mr. A. W. BLOMFIELD, M.A., the President, in the chair.

Mr. ARTHUR SMITH, hon. secretary, read the minutes of proceedings at the last meeting, which were found correct and signed.

New Member.—Mr. FRANCIS SKIDMORE was elected a member of the Association.

Metal Work.—Mr. F. A. SKIDMORE, of Coventry, read a paper on Metal Work, which was illustrated by a great number of drawings and sketches. We shall, in a future number, give a full report of the lecture, with engravings of the illustrations, without which it would lose much of its value. Only the first portion of the paper was read on Friday evening, the remainder being reserved for a meeting to take place in May next, when the discussion upon the whole will take place. The lecturer, we may at present briefly state, dwelt on the antiquity of metal work in architectural productions, and, in proof thereof, made quotations from the Sacred Scriptures, referring particularly to the temple of Jerusalem. When architecture had a living naos of its own, gold and silver were used in it to an infinite extent. And there never was a period in the world's history in which metallic forms developed themselves as at the present day, as in the construction of bridges, vessels, &c. The lecturer proceeded to show how metal work might be made beautiful, and developed truthfully and usefully; and referred to the natural treatment of metal, drawing attention to the way in which this had been managed in various ages. He next spoke of casting and other modes of treating metal, and alluded to the extraordinary development of iron-work at the present day. In ancient times gold and silver were used in great abundance in the decoration of edifices, in which the most skilled artisans were employed, and many architectural forms were of metallic origin. There was nothing so capable of an endless variety of form as metal work. Then we ought to use the greatest thing given to this age—its metallic development. The era referred to by the lecturer were chiefly the Assyrian and Greek, and he announced that the concluding portion of his lecture would refer to the Celtic, Byzantine, and Mediaeval periods.

The CHAIRMAN announced that the second part of the lecture would be delivered on a future evening, of which due notice would be given in the professional papers.

A vote of thanks to Mr. Skidmore for his instructive and interesting paper closed the proceedings.

INSECURE SCAFFOLDING.—F. M. D., in a letter to a contemporary says—"I beg leave to draw your attention to the very dangerous mode taken now-a-days in the erection and securing of scaffolding used for building and other purposes. The accidents which have occurred by the fall of these erections have been very many. To enumerate even those I at present remember would trespass on your valuable space. Suffice it to say, that scarcely a week passes but we have some melancholy instance brought under our notice of the shameful manner in which these erections are constructed—dangerous, not only to the workmen employed on them, but also to any person who may chance to be near them. It is but a few weeks ago that a frightful accident occurred from the fall of a scaffold in St. Martin's Hall, when several workmen were killed and others hurt; and, again, more recently, a young lady, a visitor to her Majesty, nearly lost her life whilst passing along Piccadilly, through the same cause. I have no practical knowledge of such erections myself, and cannot, therefore, suggest a better mode of construction; but surely lives are not to be sacrificed every day in this way. Why should there not be a surveyor, whose duty it would be to see that the scaffolding is secure as well as the house? Really this is a subject some attention ought to be paid to; and, Sir, I know that when I ask you to take the matter up I leave it in good hands—hands which are ever ready to expose recklessness and point out error."

PAINTING IN THE HOUSES OF PARLIAMENT.—One of the votes to be taken when the House of Commons proceeds with the Civil Service Estimates is for the new Houses of Parliament, and includes a sum of £1,750, half the amount to be paid to Mr. D. Maclise, for a second wall-painting to be executed in the Royal Gallery. Of the two large compartments, one is now occupied by Mr. Maclise's "Meeting of Wellington and Blucher," already completed; and the other is to have the painting now to be begun, the subject of which is to be the "Death of Nelson." These paintings exceed 12 feet in height and 45 feet in width.

THE WINTER GARDEN AT KEW.—Progress is being made in the construction of the new house, and next autumn is to see the completion of the grand centre, 212 feet in length by 137 feet in breadth. Votes are now to be taken in the House of Commons, £3,000 for heating apparatus and £1,200 for walls for the arrangement of earth beds. When the two wings are built the total length (including the vestibules) will be 583 feet, and the superficies about an acre and three-quarters. This temperate-house makes the vote for Kew-gardens and grounds again large this year.

ON MOVABLE BRIDGES.*

THE subject of movable bridges is brought before this Institution, not because anything very new or original is to be introduced or explained; but it is presumed that it will not be uninteresting to glance at some of the prominent features of such bridges, at some of the improvements which have lately been made upon their construction, and at the merits of each kind of movable bridge in certain situations.

Under movable bridges may be classed draw or lift bridges, swing bridges, floating or pontoon bridges, and telescope bridges; but at present the subject shall be confined to draw and swing bridges, which are the only movable bridges adopted to any great extent in this country for permanent use.

At first, in crossing the ditches round fortresses, draw bridges consisted of a simple wooden platform, which was fastened at one end to a beam laid horizontally, and parallel to the sides of the opening to be crossed, or to the top of a stone wall or abutment by means of strong hinges. The platform was acted upon at its other extremity by levers, or by chains, worked either by wheels or by hand, and thus raised to the vertical position when necessary.

When ship canals were introduced into this country about a century ago, it was requisite to have movable bridges for all roads which crossed over the navigations. Draw bridges of a simple construction were often used for this purpose. The platform was generally divided into two equal parts, each revolving on a horizontal axis, and raised by means of chains passing over pulleys, which were wound up by wheel gearing. Afterwards the back-balance was added, and which is now one of the principal features of a draw bridge. The equilibrium being perfect, friction is the only thing to be overcome in raising or lowering the platforms, and this is generally effected by means of a pinion working into a circular rack, which is fixed to the sides of the bridge.

Draw bridges are also used for crossing locks and dock entrances at many of our harbours, and some of them are of considerable dimensions.

The abutments of these bridges are generally of masonry. The chambers or wells for the counter-balances are sometimes formed by inserting into the stonework of the abutments cast-iron boxes; but these wells can be made perfectly water-tight by ashlar masonry set in hydraulic mortar. The platforms were at first nearly always constructed of wood, and afterwards many were made of cast iron; but during the last ten or twelve years several large lift bridges have been constructed with wrought-iron girders and cross braces.

The draw bridges over the Forth and Clyde Canal, in number about forty, are from 20 to 22 feet in span between the faces of the abutments, and from 19 to 14 feet wide, the platform of each being in two leaves. The axles are of cast iron, with sockets in front, into which the timber joists are fitted, and with arms behind, to which the back-balance is fixed. The axles revolve on cast-iron bearings, and each half of the bridge is raised by means of the gearing shown in the drawing. The timber joists are covered by two layers of planking, and the sides are protected by wooden fences. These bridges are very easily worked by two men, one on each side of the canal.

The draw bridge at the London Commercial Docks is 48 feet span in the clear, and was erected from a design by Messrs. Walker and Burgess, in 1853. The platform is also in two parts, each having four wrought-iron girders 43½ feet long, firmly bound together by cross wrought-iron braces and ties. A cast-iron axle 12 inches square is firmly fixed to them, and revolves in plummer blocks provided with brass bushes. Kentledge boxes are fixed to the landward ends of the girders, and between them, for the counter-balance, which is 10 tons in weight, for each half of the bridge. The girders are covered with two layers of planking in the usual way, and the bridge is raised by the gearing at each side of each leaf, four men being required for opening the bridge.

Swing bridges are now extensively used at harbours, and for crossing inland navigations, both for roads and railways. The abutments are generally of masonry, but in many cases they are constructed of timber. The platforms of swing bridges, until lately, were usually of timber framing or of cast-iron girders, tied together and covered with planking. To the under side of the platform was fixed a cast-iron ring or roller path, and a similar ring was fixed to the abutment, the surfaces being inclined for the rollers. Between these rings were placed from ten to twenty conical rollers set in a cast-iron frame or live ring at equal distances. These rollers were generally from 6 to 18 inches in diameter, and from 6 to 12 inches broad. The concentricity of all the rings was preserved by means of a centre pin. The rollers were usually of chilled iron, but sometimes of brass, and on them the whole weight of the bridge was placed. The friction was thus considerable, and powerful gearing, worked by at least two men to each leaf, was required to open and shut all bridges, but those of the smallest and lightest description.

There are many fine examples of these bridges at our principal harbours, of large dimensions, and which reflect credit on their designers and constructors.

Swing bridges for roads were nearly always formed in two movable leaves; but when railways began to intersect the country, it was necessary to modify or improve such bridges, so that a rigid platform for the passing train could be obtained in crossing the numerous navigations, for which it was essential to have head-room for masted vessels. To get this rigidity, swing bridges of one leaf have been generally adopted, and these have been made either of cast or wrought iron. The bridge over the river Rother, on a branch of the South-Eastern Railway, is a good example of a cast-iron swing bridge, the girders of which are 112 feet long, each weighing 24 tons, and made up in four lengths.

The bridge near Falkirk, designed by Mr. A. J. Adie, for carrying the Stirlingshire Midland Junction Railway over the Forth and Clyde Canal, is an admirable example of a malleable iron swing bridge. In the former, the whole weight of the bridge is on sixteen conical rollers; in the latter, the greater part of the weight is on a steel ball, supported by a centre pivot; and the remainder of the weight is on conical rollers, with upper and under rings or roller paths. This bridge is easily worked by two men, and the platform is made rigid by means of four strong screws, which are turned by geared shafting. There is also a centre screw, by which the whole weight can be placed on the steel ball, and the platform adjusted. The ironwork and platform of this bridge cost about £1,000.

As in engine turn-tables, improvements have been introduced, which have simplified and cheapened the construction of swing bridges, and have rendered the working of them easy and expeditious. The recent improvements are—1st,

making the framework of wrought iron instead of cast iron, and thus reducing the weight of the platform, and correspondingly the back-balance. 2nd, putting the whole weight, or nearly the whole, on a centre pivot, capped with a steel ball, working into a steel socket. 3rd, having only four or six narrow rimmed wheels, with axles working in journals, and which are used merely to keep the platform horizontal, instead of a large number of conical rollers. By these and other minor improvements not only is the friction reduced to a minimum, but the construction is much simplified and cheapened, for the live roller frame and upper roller path are done away with altogether, and bridges of moderate size can easily be worked by one man.

A swing bridge into which these improvements have been introduced, has lately been erected from drawings made out by, and under the superintendence of, the author, for carrying the Twecher and Neilston Railway, belonging to Messrs. William Baird and Co., over the Forth and Clyde Canal, near Kilsyth. The clear span of this bridge is 25 feet, and the width of platforms 11 feet. The abutments are constructed of timber piles, tied and braced together and covered with planking. On the south abutment are fixed the centre pivot, and the casting or wheel-path, which is 11 feet in diameter. The moving platform consists of two wrought-iron girders, each 45 feet long by 2 feet in depth at the pivot, and 14 inches at the outer extremities. These girders are constructed of plates of angle irons riveted together in the usual manner. Over the pivot the girders are joined together by a strong cast-iron cross girder, made hollow at the centre to encompass the pivot. To the top of this cross girder, at the centre, is fitted a strong cap, into which a steel socket is fitted. This socket works on the steel ball, which is a hemisphere, 7 inches in diameter at the base; and the cap is fixed to the girder by six 1½-inch screw bolts, by means of which the bridge can be raised or lowered a little for adjustment, and by which the whole weight of the platform can be put on the pivot. The longitudinal girders are farther tied together by two cast-iron and three wrought-iron cross girders. To the ends of the cast-iron cross girders, along with the web of the longitudinal girders, the wheel bearings are fixed by screw bolts. The four wheels are of cast iron, 18 inches in diameter, with rounded tires 2 inches broad. The axles are of malleable iron 2½ inches in diameter, and revolve in journals placed close to the main girders. The bridge is covered with planking 4 inches thick, and the rails are laid upon the longitudinal timber beams, which rest on the planking right over the girders. The bridge is opened and closed by simple gearing: the lower pinion working into a circular rack, which is cast upon a part of the ring or wheel track. The ends of the girders swing over the abutment plates and about 1 inch clear of them; but to bring the platform to a solid bearing upon the plates, a wrought-iron wedge, 9 inches broad, which slides in a grooved frame, fixed to the bottom flange at the end of each girder, is driven tightly in between the girder and abutment plate by means of handles, levers, and connecting-rods; and by the insertion of the four wedges the platform is made perfectly rigid. The bridge has a self-acting catch or lock to fix it when either closed or opened. The back-balance weighs 13 tons, and consists of square blocks of cast iron, placed on the plates between the girders behind the pivot. A considerable mineral traffic has passed over this bridge during the last eighteen months, and it has been found to answer the purpose satisfactorily. It is easily opened or closed by one man in 60 or 70 seconds. The movable platform, including all the ironwork, cost about £300, and the abutments about £470.

It remains now to allude briefly to the advantages and disadvantages of draw and swing bridges in certain positions.

Draw bridges are very suitable for crossing the entrances and locks at harbours, where ground is limited and valuable, for all their parts are confined within the roadway, whereas in swing bridges when open, the platform covers ground or waterway of its own dimensions, which may not in many cases be easily given up for this purpose, as at the crowded docks of London. Draw bridges are, therefore, still being adopted there, for besides the large one erected at the Commercial Docks in 1853, already referred to, and which has since worked perfectly satisfactorily, another wrought-iron draw bridge, 34 feet span, has been opened for traffic two weeks ago by the same engineers at the same docks. A similar bridge was also erected over the harbour of Great Yarmouth, 50 feet span, in 1854.

Several cast-iron lift bridges were erected over the entrances to the Hull docks forty-five years ago, and are still in good working order. At many other places they have been adopted with advantage. Their adaptability to dock purposes is worthy of consideration by engineers, where a large portion of the traffic, as in London, consists of barges passing out and in, in which case it is only necessary to raise the bridge a little to allow the barge to pass; whereas in a swing bridge, the leaf would require to be turned nearly full round, occupying much time.

However, in many cases, draw bridges are now being superseded by swing bridges. The principal advantages of the latter are the simplicity of their construction, the working parts being all above the abutments, and readily got at, and consequently more easily kept in repair; and their suitability for railway purposes, for draw bridges being nearly always in two leaves, it is difficult to make them rigid enough for a passing train; and for roads over canals or other inland navigations they are not so convenient or so economically worked.

At present on inland navigations where draw bridges are in use, as on the Forth and Clyde canal, one permanent bridge keeper is sufficient for each bridge, the leaf on the towing-path side being raised by the horse driver; but when steam-power on canals becomes universal, as is likely to be the case, two bridge keepers will be needed to work each of the draw bridges, otherwise a man from the steamboat must leap ashore at every bridge for the purpose of raising one half of it; a practice which will both cause delay and be dangerous.

The equilibrium of a draw bridge is often interfered with by surface water running into the counterbalance wells, and by the wooden platforms becoming soaked with rain or dried by the sun's rays. In a swing bridge the exact equilibrium is not of so much consequence, for any small over-weight on one end is easily borne by the wheels.

It may, therefore, be expected that the day is not far distant when swing bridges will take the place of draw bridges on all inland navigations on which movable bridges are required; and even for harbours they are generally found to be better suited for crossing locks and entrances to docks and basins.

This subject has been brought forward so that the merits and demerits of swing and draw bridges may be considered and discussed, and not without the hope

* Read before the Institution of Engineers in Scotland, by Mr. D. McCALL.

that the engineering knowledge and skill of many of the members of this Institution may suggest to them improvements which may still further simplify and economise their construction.

In the course of the discussion which followed,

Dr. RANKINE said there was another class of bridges, on the telescope principle, of which he had seen no account published in detail. In 1847 he had examined one on the South Coast Railway, near Arundel, which worked satisfactorily. It was designed by the late Mr. Rastrick. The clear span of the bridge across the river Arun is 60 feet. The main platform, carrying a single track of rails, is 140 feet long and 15 feet broad, and is supported by suspension from a pair of timber trussed girders of the design shown in the figure. The whole of the timber framework is in scantlings of 1 foot by 1 foot, except the smaller uprights, which are 8 inches by 8 inches. Each of the four sloping tiebeams, by which the end of the platform are hung from the central standards, has a pair of flat wrought-iron bars running along its sides. These bars measure 3 inches by $\frac{1}{2}$ inch, and are the true ties, the timber beam serving only to stiffen them. In like manner, each of the smaller uprights, A, has alongside it a pair of iron strops, measuring 2 inches by $\frac{1}{2}$ inch, and these are the true suspending-pieces by which the platform is hung from the trusses, the timber uprights serving only to stiffen them. On the other side of the longitudinal timber sole-beams are a pair of inverted rails, which rest upon seven pair of wheels 5 feet in diameter. Those wheels are supported by fixed timber framework, not shown in the sketch. Under the centre line of the platform is a fixed longitudinal rack, teeth upwards, supported by a timber frame. Into that rack there gears a pinion on a transverse shaft, carried by a platform. That shaft is driven through two trains of wheelwork by two winches, one at each side of the middle of the platform. The side platform, for filling up the space between the main platform and the fixed track when the bridge is shut, is carried by ten wheels 3 feet 6 inches in diameter, which run upon fixed transverse rails. To the best of his remembrance it took two men about twenty minutes to open and shut the bridge. The framework appeared to him to have excess of strength, and consequently of weight, above what was necessary for safety.

RIPON DIOCESAN CHURCH BUILDING SOCIETY.

THE annual meeting of this Society was held on Thursday week, in the Town Hall, Richmond.

The EARL OF ZETLAND, who took the chair, said he was perfectly certain that the Church Building Society had already effected great good in the diocese of Ripon, and he trusted, from the accounts he had heard, that the Society was progressing, although it still required additional support to fulfil its legitimate purposes, and produce all the benefits which should be derived from it. As an instance of the benefit conferred by the Society his lordship mentioned that ninety-six grants had been made towards new churches, containing free sittings for 43,842 persons. The estimated cost of these new churches was 199,000, of which amount the Society had paid £31,798, and there was £2,215 yet to be paid. The Society had also effected an increase in the number of free sittings to the extent of 6,742, independent of those set apart in new churches which have been opened. He did not know the exact number of parsonage-houses which had been provided by the Society, but not less than £22,658 had been paid on that account.

The Rev. Canon CURT then read the report. The income during 1861 had been £2,219, or £78 below the average for the last twenty-one years. During the past year the legacy, left by Mr. Uppley, of £1,000, was received, and also one of £500; but, notwithstanding these considerable sums, it appears from the cash account that the charge on the income of the current year is no less than £4,661 9s. 10d.

Since the establishment of this Society in 1838 it has granted	
in donations for building new churches	£35,353
For restoring, improving, and enlarging old ones.....	6,266
For purchasing buildings for worship	500
For adding to poor endowments	13,460
For building parsonage houses	24,748

Total

£80,527

But the whole sum expended in carrying out these objects has been £403,130, so that no less than £322,603 has been raised chiefly by private charity. The result of this outlay appears in the form of ninety-nine new churches built, thirty-six enlarged or improved, upwards of 50,000 free sittings, besides children's seats, obtained, sixty-five poor benefices aided, and 127 parsonage houses erected.

MASTER'S COURT, TRINITY COLLEGE, CAMBRIDGE.

THE ground-plan, given on another page, will complete our illustrations of this building; a view appeared in our last volume. Mr. Salvin, as there mentioned, is the architect.

THE LATE FALL OF HOUSES AT HACKNEY.—The Metropolitan Board of Works have instituted an inquiry into the causes which led to the late fall of houses in Hackney, by which it will be remembered several lives were lost. Mr. Vulliamy, the superintending architect, has presented to that Board a report, in which he states:—"I have made inquiries into the circumstances of the case, and a personal survey of the buildings themselves. After giving careful attention to the several points for consideration, in order to determine, if possible, the cause of the failure in the stability of the buildings in question, I considered the effect to have been produced by several causes, viz., inattentive supervision on the part of the builder's foremen, and undue haste in executing works in such a critical situation. From the majority of the bricks used being of a very inferior description, and quite unfit for the purposes to which they were applied, the mortar also being of a very inferior sand and imperfectly mixed, from the incomplete state of the roofs at the time of the accident, and the want of a proper tie between the front and back walls at the level of the several floors and in the roof—the above-stated causes, combined with the vibration of the trains passing so constantly day and night, and acting upon hardly executed works, the brickwork being no doubt affected by the sudden changes of the temperature, and the scaffolds and roof being over-weighted with men and materials—all created a movement, and caused the front wall to bulge and fall."

THE CIVIL SERVICE ESTIMATES.

IN the House of Commons, on Monday, on the first vote of £33,503, for the maintenance of the royal palaces for one year.—Mr. Ewart suggested the removal of the pictures at Hampton Court to London, for greater safety and accessibility; and, in reply to a question, Mr. Cowper said that it was not the practice of the Government to insure any of its property, but special care was taken to prevent and extinguish fires. He also explained that the paintings were to be cleaned and varnished under the care of Mr. Redgrave, superintendent of the royal pictures; and the rest of the cartoons were to be enclosed with glass, as some of them had been. He agreed in what had been said respecting the bringing the cartoons to London; but this could not be done till there should be a building provided to put them in.—Mr. Coningham said that if the Royal Academy were removed from the National Gallery there would be plenty of room for national pictures. He was sorry to hear that more of the pictures were about to be put into the hands of the cleaners, seeing that they had so greatly injured those of the National Gallery on which they had been permitted to operate. He was convinced that art would be greatly advantaged by the abolition of picture cleaners.—The vote was agreed to.

On the vote of £89,510 for public buildings, Sir M. Peto drew attention to the enormous amount paid annually by way of rent for public buildings.—Mr. Cowper said the advantage of hiring buildings for public purposes was, that they were speedily available for use, and need not be occupied longer than was necessary.—Sir S. Northcote then inquired what steps would be taken to improve the fountains in Trafalgar-square?—Mr. Cowper, in answer, said he quite agreed that the fountains were such as Englishmen might well be ashamed of. At the same time, he ventured to say that by the month of May they would be such as every Englishman would be proud of. As the House had been good enough last year to vote a sum of money for increasing the supply of water, works were now in progress that would make them very ornamental and much to be admired. At present the water used in them, and which it was complained was charged with vapour immediately it came into contact with the air, was the hot water from the engines which was passed through the fountains for cooling purposes; but that arrangement was only temporary.—Mr. Hunt inquired why rent was being paid for the old Stationery Office when there was a new one now built?—Sir H. Willoughby complained that the New State Paper Office, which had been built at a cost of £40,000 or £50,000, was about to be pulled down.—Mr. Cowper said that he exceedingly deplored the necessity for pulling down the New State Paper Office. It unfortunately, however, stood upon a portion of the site which had been obtained at great expense for the New Foreign Office and India Office, and if it was allowed to remain would seriously injure the effect of the architectural elevations. Although it was true that it originally cost £40,000, it was not worth nearly that sum, as a very considerable expense was incurred in consequence of the foundations having been sunk in a troublesome quicksand. The new India Office was to be placed on the spot on which the State Paper Office had stood. The old Stationery Offices would be given up when their leases lapsed.—Sir H. Verney complained of the unsafe state of the houses in Chancery-lane in which the records were placed. One of them had fallen down a few weeks ago.—Sir M. Peto repeated his inquiry with respect to the desirability of erecting a building, modest in its elevation, which would accommodate the various offices which were now scattered throughout the west end of the metropolis, at an annual cost of £27,000; and Mr. S. Booth wished to know the intentions of the Government with respect to the houses in New-street, upon the owners of which they had served notices that their site would be required for the erection of the new Admiralty Offices?—Mr. Cowper said that the question of providing offices for the various commissions should have his best attention. He thought that probably a portion of the site in Downing-street might be appropriated to that purpose; and that the plan for the enlargement of the Admiralty Offices had not been abandoned, but had been postponed till next year. The plan had not been fully matured. With regard to the National Gallery, it was able to contain the pictures that were required to be put into it now; but he did not think the present building would suffice for long. When it was found that it was not spacious enough, some proposition would have to be made, but at present no proposition had been made.—The vote was then agreed to.

It was proposed that £86,664 should be voted for the Royal parks and pleasure grounds.—Mr. Ewart remarked that a certain portion of Hyde-park had been enclosed for the deputy ranger's cows, and when an opportunity occurred he trusted it would be thrown open to the public.—Mr. P. O'Brien reminded the house that they were asked to vote £7,000 for Battersea-park, which they were told was to pay itself. He wanted to know whether the charge was to be permanent?—Sir J. Shelley believed that the reason Battersea-park was not self-supporting was that the toll upon the bridge prevented people from building on the sites in the hands of the public. With regard to Hyde-park, he had endeavoured to persuade the Government to purify the Serpentine by pouring water from St. James's-park; but they thought right to dig a well instead. The well, he believed, was now dug, the fountains were erected, but no water was forthcoming.—Mr. Ayrton believed that the metropolis would have no objection to take over those parks, not royal parks, from the Government, and keep them up. If the Government handed them over to the municipality, they would be taken care of without any charge upon the national revenue.—Mr. Cowper thought the hon. gentleman was far from representing the feelings of the people of the metropolis. He (Mr. Cowper) should like to know what the hon. gentleman meant when he spoke of municipality? Did he mean the vestries? The question of a municipality was a sort of dream of the hon. gentleman. He fancied he was conjuring up something grand and noble in the name of a municipality, and he perhaps imagined that he was going to be the head of that municipality. Seriously, to invite the Government to give over these parks to the ratepayers, with a charge on the ratepayers, was, he ventured to think, a proposition that would not be ratified by the metropolis. There could be no doubt that these parks must be maintained, and he considered it was as well-spent money as any that they were accustomed to vote. They not only afforded enjoyment to numbers of persons coming from all parts of London, but he believed that the mortality of London would be greatly increased if they had not the parks. With regard to Battersea, he thought that, as soon as the great sewer, which was in progress, was completed, the land there would be taken for building on. It was not desirable that houses should be built until there was a proper main drain to carry off the refuse of any houses that might be built there.—The vote was agreed to.

ON LAND AND BUILDING SOCIETIES.

MR. W. CHAMBERS lately delivered an address before the Architectural Institute of Scotland, on "Land and Building Societies as conducted in England." The demands on our space from every quarter does not allow us to give the address in full; the material points, are, however, subjoined.

Mr. CHAMBERS said building societies began forty years ago in Scotland, and, spreading to England, became the subject of a statute, 6 and 7 William IV., cap. 32; but they were of little avail until freehold land societies were commenced about 16 years ago. The primary objects of these land societies was to buy freehold lands and retail them out in lots sufficient to confer a forty-shilling franchise; but this has, to all appearances, sunk into secondary importance. The land societies are registered under the same Act as the building societies, and are conducted on the principle of raising money by shares payable by instalments. Devoting their funds to the purchase of real or leasehold estate, they dispose of allotments to members at only a fair profit above cost price, receiving payments on certain convenient terms. As the two kinds of societies—land and building—act in unison, their operations for facilitating the purchase of houses by workmen have at length attained to the character of a stupendous system. In Birmingham the success of these societies is most marvellous. It appears there are now from 8,000 to 9,000 houses with gardens so allotted, and either already paid for, or in the course of being so. Fully 90 per cent. of the members of the Birmingham societies are mechanics, whose wages average from 21s. to 30s. weekly, out of which the annual average investment of each person is about £18. One group of societies with 6,000 members, receive in the aggregate £100,000 per annum; and another group, with from 3,500 to 4,000 members, receive in the aggregate not less than £50,000—total, £150,000—a surprisingly large sum to be collected in a few shillings a week from a body of workmen, and indicating the fervour with which they are generally animated. The houses are of brick, but neat and attractive, and are provided with gardens and all proper conveniences. The greater number of these dwellings are situated in the environs on land bought for the purpose. The question he (Mr. Chambers) had constantly before him was—what sort of a house can a workman with from 20s. to 30s. a week contrive to purchase? The result of his inquiry was to place beyond a doubt that many with wages of that amount have been able to become proprietors of very neat and comfortable dwellings. In none did he see any squalor or disorder, or what would be likely to injure health. On the contrary, the wish and the capacity to be cleanly and even tasteful were everywhere conspicuous.

On the subject of land and its prices, Mr. Chambers gave some facts.

The land, mostly freehold, is bought by land societies, and divided into allotments for members. The latest purchase was that of the Aston Park Estate, measuring 26 acres, which cost £23,000. It has a frontage of two miles, and is divided into 333 allotments, which have been taken up in a spirited manner. The strange thing is the comparatively high price of allotments. Prices vary, but it is not unusual to charge £40 to £50 for a piece of ground for a house and small garden. For example, it is seen by a list of prices that a lot consisting of 114 square yards cost £44, being at the rate of 7s. 8½d. per square yard, or £1,865 per acre. Some lots are as high as at the rate of £5,898 per acre. Compared with land sold near Edinburgh at £20 to £30 per acre, these prices are perfectly astounding, and conclusively demonstrate that it is not cheapness of land that produces the universal desire to be purchasers. The allotments are awarded to those who offer the highest premium, the amount of which, however, is restored if the mortgage is paid off within ten years. On procuring their title, members make their will, bequeathing their property to their families. For this purpose they fill in blank forms of will, kept at the office of the society; and simply effected, the thing costs them nothing. Ordinarily, the price of land and house, amounting from £120 to £180, but sometimes more, is paid up in from ten to fourteen years; the amount of the whole instalments being sometimes not more than would have had to be paid for rent to a landlord during that period. The whole cost of a title to a property is £1 18s. 6d.; and in the case of heirs, it requires no renewal. Many are able to pay up more promptly than others, not only from having better wages, but by having begun to deposit years before they required a house. Commencing to pay in from 2s. to 3s. a fortnight just when out of their apprenticeship, they in time accumulate a considerable sum; and when the period arrives for them to be married and begin housekeeping, they can almost liquidate one-half the price of a property. A comparatively small sum being thus to be borrowed from the society, the instalments to redeem the mortgage are speedily got rid of, and before middle life, when the burden of a family presses most severely, a man finds himself in the enviable position of being rent-free, besides having a property which he can bequeath to his wife and children. Inspired by the hope of realising a property, and so far securing independence, the workman scarcely needs any incentive to shrink from all kinds of expenditure not absolutely necessary. Old indulgences are relinquished, economic habits are formed, and devoting every spare sixpence to the liquidation of the debt on his property, he looks with absolute derision on the weakness of consuming even so much as a quart of beer in the public-house. Never was there such an auxiliary to the cause of temperance as these land and building societies. It can easily be supposed that with the prevalence of these sentiments, a very considerable improvement has taken place in the social aspects of Birmingham. For that town the land and building societies have done very much what the co-operative societies have effected for Rochdale. They have infused a higher tone among the general body of operatives. I have stated that this is essentially a movement of the working classes, who receive but very slight assistance from those who usually take a lead in public matters. The higher orders, however, who now understand and appreciate the nature of the societies, give them every sort of encouragement. Members of Parliament, magistrates, clergymen, merchants, and others—and I should not omit the esteemed Recorder of Birmingham—all give their approval, and frequently attend the soires and public meetings of the societies. In Wolverhampton, the busy seat of the iron trade, the working classes have been quite as eager in joining building societies as they are in Birmingham. I learned this morning that the land and building societies of Wolverhampton now number 4,794 members, have purchased 150 acres of land, made 1,343 allotments for houses, nearly 900 of which are built, and that their gross receipts up till this time amount to £173,989. In Coventry, with a population of ribbon-weavers, there was less expectation of success in these undertakings; but in that town also I saw many rows of dwellings which had been acquired by operatives. The progress of the societies had, however, been brought to a complete stop by the unforeseen and unfortunate dulness in the ribbon trade. Many of the operatives had sold their dwellings, and with the proceeds had gone off to a new field of exertion. In Manchester,

although the land is mostly leasehold, and held in perpetuity on paying chief rent, the land and building societies have been equally successful, and are, I believe, between forty and fifty in number. In Liverpool there are now more than 180 societies, but they are generally smaller than those in Birmingham and Manchester. In London, as is well known, there are numerous societies. Latterly these institutions have been introduced into South Wales, between which and the borders of Scotland there are now few towns without them. Throughout England and Wales there are said to be 2,000 land and building societies, comprehending more than 200,000 members. The money paid into the societies now amounts to above eleven millions, of which upwards of eight millions have been invested in property, part of the overplus having been repaid with interest. It will be understood that many calls have been made on account of want of employment, sickness, and death, removal, emigration, and other unforeseen events.

Having given a brief account of the land and building societies of England, and their generally beneficial influence, my occupation (continued Mr. Chambers) may be said to be at an end. I am not here for the purpose of arguing whether, in all circumstances, it would be preferable for workmen to rent, instead of buying houses, or whether in particular cases it might not be proper for associations of benevolently-disposed capitalists to get up houses for the working classes. My only object has been to make you acquainted with the remarkable fact that throughout a large part of England there has lately sprung up a practice among the operative body of providing houses for themselves. It will be observed that at Birmingham and elsewhere the question is not one of mere house accommodation. Something more is realised. The obligation, or it may be the fancy, to purchase a small and enduring property, obviously cultivates habits of prudent forethought and frugality, along with that sentiment of independence and self-respect which we can scarcely expect to see evoked under any plan of fostering benevolence. My wish, of course, would be to see the working classes of Scotland emulate their brethren in the south; nor do I know of anything that should seriously obstruct them. No doubt there exist some peculiar difficulties in the costliness and cumbersome of few charters, which we may hope in time to see cheapened and simplified. We are not, however, to forget that the substitution of an annual fee-duty of at most a few shillings for a payment outright of £40 to £50, is in itself an advantage to the less opulent classes. Our fee-duty, in fact, is only another name for chief or ground rent, such as is paid by large numbers in England who have built houses on leasehold property. Benefit building societies, which began in Scotland, now exist very generally in this country. Differing, it may be, in a few minor details from the English societies, they are registered under the same Act of Parliament, and enjoy the same immunities. Sometimes known as investment societies, all pursue the plan of advancing money on house property, and of taking payment by instalments to suit members. I am sorry that there are within my knowledge two instances of Scottish building societies having been broken up with loss on account of mismanagement; but, generally speaking, the institutions are conducted on a sound footing. In this city there are several societies of this kind, in which I believe every confidence may be placed. So far, then, there is already an effective mechanism for facilitating the purchase of houses; but, unfortunately, the members of our building societies are restricted in their operations by the want of land societies. Therein consists the weakness of the Scottish system. The advances of the building or investment societies are to a considerable extent on houses built it may be fifty or eighty years ago; prices are accordingly run up, property rises to a fictitious value, and the dearth of house accommodation is constantly increased. These societies must begin to see that, unless they widen their basis, so as in some measure to comprehend the qualities of a land society, they may easily become a public injury instead of a benefit. It would be foreign to the purport of this address to refer at any length to what we are all fully aware of—the lamentably defective house accommodation in the Old Town of Edinburgh, the condition of which, when compared with what I have described at Birmingham, might well stimulate the most lethargic. But, indeed, the state of this ancient city, with its foul and unwholesome dens,

"Where misery pours his hopeless groan,
And lonely wretches retire to die."

is to us all something of a misfortune and disgrace; and surely the time cannot be distant when, on public grounds, an effort will be made to render it fit for human residence. I should be glad if this were done in a manner to offering building ground at a reasonable price for workmen's houses; for the draining away of the more respectable operative body to the suburbs would only tend to the still further degradation of the city. That, however, is not a private but a public question, and as such it must be treated. Failing any speedy measure to clear the ground, the working classes, if earnestly disposed to follow the examples I have narrated, will look towards the environs, and, as in the case of the Co-operative Building Society, trust to themselves. Far be it from me to speak disrespectfully of the efforts of associated capitalists to meet the emergency, but independently of such endeavours being necessarily inadequate, I repeat that this is not alone a question of better house accommodation, but points to better habits and tastes, the self-respect and sense of responsibility incidental to the possession of property, and, in short, social and moral elevation. More I need not say. If the imperfect explanations I have offered chance to incite the working men of Edinburgh to follow in the footsteps of their English brethren, it will be to me, whatever it be to others, a matter of unspeakable satisfaction.

SIR JOHN SOANE'S MUSEUM BILL.

THIS bill has been read a second time without opposition.—Mr. Tite, in the House of Commons, consented, on the part of the trustees of the Museum, very unwillingly to the passing of this bill. Their only object in consenting was to lend to the National Exhibition the series of Hogarth's pictures in their possession, known as the "Rake's Progress," without which it was believed the collection of works by that admirable artist would be incomplete.

RE-OPENING OF THE SOANE MUSEUM.—On Wednesday the Soane Museum, at 13, Lincoln's-inn-fields, was opened to the public, and will continue open from ten to four o'clock every Wednesday, Thursday, and Friday, for such period as the Trustees may hereafter determine. In addition to the Museum being now open three days a week instead of two, as formerly, tickets of admission may be obtained with less formality, by all persons who may apply and enter their names in the book kept in the hall for that purpose.

CHURCH, CHAPEL, AND SCHOOL BUILDING.

Ketton.—A local journal says—The village church of St. Mary, at Ketton, near Stamford, was re-opened on Tuesday se'nnight. The cost of the work just completed is about £2,300. Owing to the want of more funds, the restoration has been confined to the nave, aisles, and transepts; but it is hoped that, at no distant day, the chancel will receive the attention it is so much in need of. Those familiar with the former neglected state of the church, and who had not seen the improvement effected until the opening day, must have been pleased with the metamorphose the interior has undergone. In the nave and aisles were square box pews, and there was an unsightly gallery at the west end. The last has been removed altogether, and inexpensive low seats, with open backs, have been introduced. All the floors have been taken up, and the surface lowered; and under the whole of the seating is a bed of concrete nine inches thick, with a hollow space of nearly a foot between this and the floors. The waistcoat pulpit is octagonal in form, and exhibits a good specimen of carving, by Irving, of Leicester. Each face of the pulpit is divided into two compartments, and in each division is a cross carved within a circle of nail-heads. The base of the pulpit consists of a central and eight smaller octagonal shafts, of Ketton stone, each capital having a band of nail-heads; the steps are of Mansfield red stone. The reading-desks and open seats in the choir were also carved at Leicester. The roofs have been entirely restored, of oak. The clerestory windows, arcade arches, basements, and the stonework generally, have been renovated. The basements of the pillars were much mutilated, the stone having been cut away to fit in the old high pews. In taking down the old fittings at the east end of the south aisle a portion of the old rood-screen was discovered, but none of the loft was left. Mr. Scott has directed the mediæval fragment to be restored and replaced where it was found. On removing the soil on the outside, the foundations and basement of the turret staircase that led to the rood-loft were found, and on the site another turret staircase, of Clipsham stone, has been erected to the belfry. A portion of the south wall has been rebuilt, and the parapet repaired; the window in the south transept has had cusping inserted; the window east of the porch has been restored, and that west of the porch has had new tracery inserted. The greater portion of the north wall has been rebuilt, retaining the old buttresses, north door, junks, &c. Two new windows have been inserted here, the same size as the former ones. The north parapet has been entirely renewed, excepting the lower course, which is the original corbel table restored. The earth has been removed from the foundation walls two feet below the floor line, and the footings underpinned. It was intended to extend the transepts north and south, and plans were prepared by Mr. Scott for this purpose, but sufficient funds could not be obtained to carry them to their original depth. The whole of the work has been carried out by Halliday, of Greetham, and Cave, of Oakham. The north and south aisles are lighted at the west end by lancets, filled with stained glass, each containing four pictures. One contains the figures of the four prophets, Isaiah, Jeremiah, Ezekiel, and Daniel; the other window contains the figures of the four evangelists, Matthew, Mark, Luke, and John. The designs for both windows were supplied by Mr. Sutton, as lately mentioned by us. As before stated, Mr. Scott is the architect.

Wickham, Hunts.—The parish church (St. Nicholas) of this village, which has long been in a state of decay and dilapidation, has just undergone repairs and restoration at a cost of nearly £1,500. The works were commenced in June last, and consisted of the rebuilding of the north transept, which was in an insecure condition, the substitution of new open timber roofs to nave and chancel, instead of the lath and plaster ceiling, the introduction of new stone windows in correspondence with the old throughout, and new seating of uniform design in place of the irregular pewing which formerly existed. Care has been taken to preserve intact every feature of interest, and in no way to seek to modernise the church. The walls throughout have been faced with "hopped" flints set in lias cement, with Bath stone dressings. New internal arches of Bath stone have been inserted to the north and south transepts, in lieu of plain semicircular plaster arches before existing, and a new chancel arch has been added, with shafts, bases, and carved capitals, representing the passion-flower, grapes, and wheat. There is a new pulpit of Bath stone, with serpentine marble shafts and glazed encaustic tiles. The chancel has been fitted up with plain stalls, and the vestry (formerly a chapel) has been separated from the chancel by an open parclose or screen. No decoration has been attempted in the chancel, the funds not allowing this to be done. It was not originally contemplated to interfere with a belfry at the west end, which was a modern structure. The weight, however, of the peal and the vibration attending the ringing had so seriously damaged this part of the work, that it was at length determined to take it down, and a small tower has been added at the west end, terminating in a wooden belfry stage and broach spire covered with shingles. Several memorial windows by Gibbs have been inserted in the church, and another is about to be placed in the east window. The works have been executed by Messrs. Chinnock, builders, of Highfield, Southampton, under the superintendence of Messrs. Francis, architects. The church was re-opened for divine worship on Tuesday the 25th ult.

Frome.—At a recent public vestry the vicar laid before the meeting the plans for the proposed restoration of the church, and entered at some length into the details. He said the object was to endeavour to restore the building as nearly as possible to its original state; and to effect this it was estimated that £4,000 would be required. Having nearly £2,400 in hand, it was proposed to proceed with the work at once, by commencing with the north side, the roof of which was not in a safe state. The organ would be removed to St. Andrew's Chapel, the west galleries removed, and the west window thrown open. The Lady Chapel, the property of Lord Cork, would be restored at the expense of his lordship and his family. To the vestry it was intended to add a vestibule. Eventually, it was hoped, the entire church would be commemorative of St. John the Baptist, it being intended to make all the windows illustrative of the saint's life. Six of the windows had already been promised. A resolution was adopted approving of the plans.

Sittingbourne.—For some time past it has been in contemplation to restore and improve the parish church, and a committee has now been formed for carrying out the work. A survey of the building was made some time since by Mr. Slater, architect, and it is proposed that the church be repewed, additional sittings made, new windows substituted for the present ones (some of which are in a very dilapidated state), and the building generally restored. The estimated cost of these improvements is upwards of £1,000.

Bollington, near Macclesfield.—It has been decided to erect a congregational chapel and schools in this place, designs for which have been prepared by Mr. Williamson, architect, of Bollington. The plan shows a chapel 57 feet 6 inches

by 36 feet, to accommodate, with gallery at one end, 480 persons. The school building is 52 feet 6 inches by 24 feet, in two stories, and is intended to be built so that whenever it may become desirable to extend the chapel, it will only be necessary to remove the partition wall to form commodious transepts thereto. The building has a tower and spire 80 feet high, the style adopted is early English. The estimated total cost is £1,800, all the stone being obtainable close to the intended site.

THE EXHIBITION BAZAAR.

A CONTEMPORARY says that the scheme of the Supplementary Exhibition has finally collapsed; but a more likely, though a less pretending enterprise has appeared in its room. Mr. Freaque, the owner of property abutting on the Exhibition-road, who conceived the idea of building a bazaar on the vacant ground, lost no time in carrying out his purpose; and a timber edifice lighted from the roof, as well as by side windows, is now nearly completed. M. Eugène Delessert, of Paris, decorator to the Emperor and Empress of the French, is the architect. The building is 400 feet long, 110 feet in width, and about 60 feet high. Persons who have been unable to obtain space in the larger building opposite, or who, having space allotted, may be desirous of selling articles of a similar description, can have space upon payment of a rental. A refreshment-room will be formed beneath the ground-floor.

THE WORKS AT WORCESTER CATHEDRAL.

WE have been asked to publish the following letters:—

Sir,—Our attention having been called to a tissue of unfair and untruthful remarks copied from the *Athenæum*, we respectfully request that you will find room for our reply. We are the contractors for the stonework in question, and we shall confine our remarks to those portions of the paragraph which refer to ourselves, leaving the rest to be answered by others, who also are unsparingly censured by this unscrupulous and anonymous writer. Having been extensively engaged in business for nearly thirty years, during which period, in addition to numerous private residences, we have been engaged under architects of acknowledged eminence in the erection and restoration of churches, colleges, and public schools, some of which are amongst the noblest in the midland counties, we might afford to bear with silent contempt the futile efforts of a scribbler, who, with a few dashes of his pen, seeks to rob us of our well-earned and highly-valued reputation; but these attacks from the London papers upon country workmen are now much too frequent to be allowed to pass by without a reply. To fair and candid criticism we hold ourselves at all times amenable, but we will not suffer any one, much less a writer who withholds his name, to traduce the character of our work, without our challenging him to make good his statements; and we now tell the writer of the paragraph that his remarks about the beautiful works filling up the spandrels having been retouched with a "ruthless chisel" is a gratuitous falsehood, inasmuch as these parts have only had the whitewash carefully taken off by competent persons. Some of the gildings and colourings are still visible. The new arcade under the east window has been executed in strict conformity with the style and character of the work. The carver and sculptor, Mr. R. Boulton—not Forsyth and Boulton—is a person of acknowledged ability, of which ample testimonials could be produced, if necessary; but on this head, perhaps, it will be sufficient to observe that, in addition to his works at Hereford and Lichfield Cathedrals, his sculpture has more than once been favourably spoken of by the *Art Journal* and *Building News*. We, too, have a cherished and reverential love for the beautiful forms which distinguish the best ages of Gothic architecture; and, feeling honoured by the task assigned us, which we have ever regarded as a labour of love, we respectfully submit to competent judges whether the work we have executed at Worcester Cathedral will not bear fair comparison with the ancient work. Had the writer's knowledge been equal to his ill-nature, he would have known that time alone can give to the oolite limestone that beautiful tint which is observable in the older carvings.

JAS. BENNETT AND SON.

Sir,—I trust you will allow me space for a few words on the subject of a paragraph which appeared in your paper last week. It is there stated, in speaking of the carvings of the spandrels in the arcade of the east end of Worcester Cathedral, that "they have been retouched with so ruthless a chisel, that all their former beauty of execution has been destroyed;" "as now mutilated, it is lamentable to see them; every sweet and thoughtful curve and delicate line of loving study has been scraped down to the poor form of a Birmingham metal casting. All richness of surface has, of course, vanished." As the sculptor and carver employed in the restoration alluded to, I beg to state that not one single portion of the old carving has been recut, or chiselled, or mutilated, in any way whatever, either by me or any person in my employment.

The accumulated whitewash only has been carefully removed. It is well known that oolite limestones, after having been quarried some months, and worked to a surface, become encrusted with a kind of hard skin on the surface—of a brownish colour. These old carvings are executed in Painswick oolite, and this brown skin or crust is still visible to any one who wishes truthfully to investigate the matter; even the old gilding and colouring in many places are to be seen. All the new work which I have executed there has been done in strict conformity with the style and character of the old, and has only been placed where the old had entirely disappeared, and under the strictest investigation of the architect.

I wish to say that I have executed sculpture for Hereford and Lichfield Cathedrals as well as Worcester, and also have works in hand for the same.

RICHARD BOULTON, Sculptor and Carver.

PRESERVATION OF PICTURES.—A contemporary says, some very simple but valuable practical hints for the preservation of pictures have recently been promulgated by the Belgian Minister of the Interior, and we commend them to the notice of the Commissioners of the International Exhibition, and others who may have the custody of valuable paintings. In the first place, the greatest enemy to pictures—damp—is referred to. In order to ward off its attacks it is recommended that "air should always be allowed to circulate behind the entire picture." In order to accomplish this a light framework of wood is to be placed at its back. The action of the sun upon paintings is rapid and fatal. This may be guarded against "by affixing blinds to those windows which are exposed to the sun's influence, or by covering the glass with a dead whitish colour." As far as possible, the placing of candles near pictures should be avoided, "the greasy smoke of the candles mingling with the dust and damp on the picture forms a glutinous matter which mars the beauty of the colouring." Other evils and accidents, too, arise from the proximity of lighted candles. "Dust and traces of damp should frequently be removed, and with extreme delicacy of touch." For this purpose it is best to employ an old linen rag or silk handkerchief. "Above all, the use of oil for giving a temporary brightness to the picture must be avoided." When this pernicious practice is followed the oil is absorbed by the colouring and the canvas or panel, and the picture will inevitably become blacker day by day. "In fact, nothing can be more disastrous in its effects than the use of oil in such cases."

Correspondence.

JOINERS IN LONDON AND LANCASHIRE.

SIR,—A few months back a large building firm in Lancashire advertised for a managing foreman, and I was selected to fill the situation, but after I had held it a few weeks I found the system, &c., so very inferior that I presented the following report, and was immediately requested to resign.

As it is a comparison between the London and Lancashire systems, and will explain the cause of a complaint made by Mr. Melley, the great promoter of drinking fountains and gymnasia, a short time back on the occasion of the opening of a gymnasium at Liverpool by Lord Stanley, to the effect that the joiners of the present day are not progressing with the age, I think you will find that the statements and remarks possess an interest worthy of your influential columns.

Liverpool, March, 1862.

COSMOPOLITAN.

* * * * * Omitting some few passages of a private nature, we give the communication referred to as sent to us.—ED.

* * * * * It is absolutely necessary that those who wish to trade successfully should have a thorough knowledge of the article they have to deal with. They should be well acquainted with its ingredients, more especially if it is labour, which is an article of the most dangerous description. Man constitutes the article labour, therefore those who deal in labour should thoroughly understand him. He may be said to be the best piece of mechanism from the hands of nature. The poet says, "An honest man's the noblest work of God." The part that makes him dangerous to deal in is his mind, as every other part is governed by it; hence employers of labour should always keep this important fact in view, and their object must be to employ the minds as well as the bodies of their men, for if the two are not employed simultaneously, neither will be employed profitably as far as labour is concerned. This being the case, a system which employs both must be superior to one that employs each separately. It is an undeniable fact that every man has a mind capable of expansion, and it is also an undeniable fact that education tends to expand it; therefore, as there are more facilities for education now than there were twenty or thirty years ago, it follows that the people are better educated and have larger minds, which consequently require more employment. It must, then, be admitted that a system which would answer twenty years since will not answer so well now; in fact, so great has been the change during these last thirty years, that a system which would be recognised then would not be tolerated in London now; but while the men have been almost metamorphosed, the systems in Liverpool have remained stationary. They are almost the same now as they were a quarter of a century back, as far as joiners are concerned. I might almost say that they are in direct opposition to the changes in other respects; for twenty years ago, when men's minds were less, they were better employed than they are now with larger minds. That is to say, the existence of minds in the men was more recognised then than it is now. When the mind of a man is employed about his work he does more, because he feels an interest in it, and the motions of his body are in keeping with the action of his mind—the former are urged on by the latter, the action of which is quick. Such a thing as loitering or skulking is unknown to it, and such a word as idleness cannot be found in its vocabulary. On the other hand, if the body is employed without it, or if the nature of the work ignores its existence nothing in the world will prevent the body from doing as little as it possibly can. The powers of the body are exhausted in half the time that they would be if the mind were employed upon the same object. If you give a man such work as will employ his mental and his physical machinery conjointly, you may leave him from "early morn till dewy eve" without the slightest alarm; but if the latter only is occupied upon the work you must not leave him an hour. Except during sleep, the former is never idle, and it follows that the latter must be the same when the same object occupies both at the same time; but where such is not the case the man is only kept to his work by the idea or the advice of the mind, which appears to be the body. "If you do not keep on with your work you will suffer some pain—you will get discharged, and suffer hunger, &c." In the case of the slave labour of the United States of America it would end by saying, "You will get the overseer's whip." The presence of some such fear as this is always necessary to keep him at work, for rest assured that when this fear ceases to exist his body ceases to labour.

The Lancashire systems appear to me to ignore the existence of mental faculties, in at least three-fourths of the men, whilst the cosmopolitan systems recognise in every man that noblest gift of nature to man. It is everywhere admitted that in that city may be found the greatest amount of talent and the first of systems. Properly speaking, there all joiners are considered equal, and one is never put over another, "gangers" are unknown, and the employer's aim is to create an interest in the mind of every man for his work, by giving him the alpha and omega of his job, for which he is responsible; that is to say, responsible for its being to the drawing with which he is provided by an efficient draughtsman. It is needless for me to say that they succeed, for they soon make a "man" a good workman. Many have I seen come into a shop who were unmistakably bad workmen, and go out first-class tradesmen, and intelligent men.

Now I come to a very grave part of my subject, which is, "the influence the occupation has upon the mind." It is everywhere admitted that it has a very great influence upon it—so great that it is second only to the schooling period of life. The trade which a youth has to learn, and the period of life in which he learns it, ought to be well considered by his parents, as well as by those who undertake to teach him that trade, for they also undertake to develop his mind. They ought not only to consider what sort of a workman they are going to turn out, but what sort of a man as well. To a very great extent it depends upon them what sort of a member of society he will be, and how he will act his part in the place of life. It is my painful duty to say that I can conceive no system more calculated to render an apprentice unprofitable to his master, imperfect in his trade, idle in his habits, and gorilla like in his mind, than that which appears to be recognised in Lancashire.

The writer proceeds to say, that with the view of introducing a system in the shops to enable his employers to secure and retain a better class of men than hitherto, and to ascertain the cost of producing work in detail, which would give a great advantage over contemporary builders:—

I should have made myself acquainted with what would be required first, and I will suppose that it was the first-pair floor windows for Mr. Brown's building, and that in the three fronts there were ten different widths. I should have made ten proper drawings, each of which would be a separate job, known by a fixed signal, viz., signal 1 would be six window fittings, 2 feet 6 inches wide; signal 2 would be four window fittings, 3 feet 3 inches wide, and so forth. The drawings for the ten jobs would then pass into the hands of the chalkline foreman, who would cut off every piece of wood required to complete the window fittings, including the frames, sashes, casings, and architraves. Every piece would be marked with its proper signal, so that mistakes were impossible. All the wood would then be placed in the stove, and after it had been there a week I should then set on ten pairs of men. To one pair and one boy I should give job 1, to another pair and a boy job 2, and so on. Everything possible I should have done in the shop, such as hanging the casements, fanlights, &c., and I should take care that every part and piece was marked with its proper signal.

Now, the work all being allotted out according to size in this manner, each man and boy would feel interested in his job, as there would not be that treadmill kind of monotony of planing-up stuff from 7 a.m. on Monday to 4 p.m. on Saturday, which kills man's spirits, destroys his intellect, and renders his life burdensome. Moreover, the foreman would have so many facilities for detecting idleness, inefficiency, and "scamping." Another important fact is that there would not be half the present waste of material. The cost per foot also could be speedily obtained, the most profitable and best men discovered, and the cost of any building, as far as labour is concerned, easily ascertained, and any loss could be instantly detected and rectified. A good basis, which might be depended upon, would likewise be established, and a great advantage obtained. A knowledge of drawing is now considered one of the principal branches of education, but twenty years ago it was considered a superfluity.

An argument will be that the 'jobbing' will frustrate the working of my system; but I can assure you that it does not, for I have seen it carried out in shops where quite as much

jobbing is done as you do here, and it is preferable on that account, as it is much better for a jobbing-hand to have a job of his own to fly to than to poke his assistance into another man's job—in which he feels no interest—and thereby lessen the interest the other man feels in it, to say nothing of the excuse it furnishes, for an undue length of time spent over it.

You will then urge that it is better, where there is a large quantity of the same description of work, that the whole should be done as one job, than to divide them into several jobs—that they will thus be executed at less per foot; but I give it as my decided opinion that, by the former system, the work will cost more per foot than by the latter system. I am acquainted with a man who made a four-pannelled door in 24 hours; but he could not make ninety-six like it in a month, twenty-four in a week, nor four in a day. I also know another that can make four pairs of sashes in a day; but he cannot make ninety-six pairs in a month, nor twenty-four pairs in a week. If that same man had a job consisting of four window fittings—that is to say, four sash-frames, four pairs of sashes, four sets of boxing shutters, and four sets of architraves, the four pairs of sashes would be made in a day; but if he had twenty-four pairs of sashes instead, with three or four men to assist him, those sashes would not be made in less than a fortnight; or, if he had twenty-four pairs to himself, they would not be made in less than nine or ten days, because of the monotony of the work. We will suppose that he was going to make four pairs in a day, and that it took him four hours to plane up the wood; is it at all likely that he will plane up the wood for ninety-six pairs in ninety-six hours, or for twenty-four pairs in twenty-four hours? No, it would be as reasonable to expect a prisoner to make the treadmill revolve as many times in a week as it does in a fortnight. To argue that five pairs of sashes will cost 3d. per foot, ten pairs 2d., twenty pairs 2d., and forty pairs 1d., is almost ridiculous, because, if you keep on at the same ratio, you can have 160 pairs made for 1d. per foot, and 320 made for nothing; and of course the men would give 1d. per foot to be allowed to make 640 pairs.

Perhaps the next argument will be that it is better to pass a great number through a machine when it is set than a few. To this I can only say that the saving effected in this way is so trifling that it is scarcely worth taking into consideration. The tools require sharpening every two doors and every four pairs of sashes, and the most modern and improved machinery is made so that it can be set with the greatest facility. The strongest argument, however, will be that the division of labour is universally recognised, which is true as regards a proper division. The only one recognised amongst joiners in London is preparers and fixers. The extensive division practised in Lancashire is a popular error which is rapidly dying out, and nothing has tended more towards the encouragement of the number of strikes which have taken place in this part of the country during these last few years. It has been the principal agent in destroying the good feeling which forty years ago existed between masters and workmen. At that period they felt that their interests were identical, and that they were bound to each other by other ties than £ s. d. I am happy to say that I believe that those good times are approaching again. The London builders are doing everything to restore that essential good feeling by founding institutions, establishing schools upon their premises for instructing the sons of the men in that which they consider the most important branch of their education, drawing, and by giving suppers, holidays, cricket matches, and donations to clubs.

One of the principal reasons why I consider the Lancashire divisions of labour an error is because it makes life, which loves variety, monotonous—converts human beings into machines. In our trade some would be sash-making machines, some doormaking machines, some shutter ditto, some casing ditto, and a great many poor fellows would be mere planing machines; but few, very few would ever have to put that sublime piece of machinery with which man is endowed by nature—the brain—into operation. The result is, that man abhors that which does not employ the mind as well as the body; he is reduced by it to the level of a lower animal, and, like the hounds in the hunt, they require the presence of a huntsman, whose duty it is to lash any lazy hound that lags behind. Men thus employed may be likened to a flock of sheep proceeding along a road, and the foreman to the dog that drives the sheep, for the moment the dog leaves off barking the sheep make a dead stop, and will not budge one inch till they hear his bark again. To get work done expeditiously you must create an interest in the man's mind for the work, or the job, and the London systems are in every way calculated to do that. Experience has taught us that men who are kept at monotonous labour never display any powers of invention, but men whose labour is various, ever changing, and thereby giving exercise to their mental faculties, which consequently become expanded, are the men who invent. If a man commences making sashes on the 1st of January, and keeps on till the 31st of December, it is questionable whether he would not be a worse sash maker when he left off than when he began, but it is quite certain that he would be no better, if he were so good, as a man who had at intervals during the year been making them twenty or thirty days. A boy at school who is kept at one particular branch of education will not master it so well as one who is kept at four or five branches.

We will, however, suppose that the occupation of the mind is not to be taken into consideration, and that a joiner, with his tools, is a planing, &c., machine. Can he not plane up wood as well for a sash as for a door? Can he not put his wood afterwards to the drawing and mark upon it the places where a mortice or a tenon, &c., is shown as well for a sash as for a door, for a skylight as for a shutter? My experience and careful observations answer yes.

The cosmopolitan definition of a joiner is a man who can produce in wood anything properly represented in a drawing. He can cut, shape, and form every detail to the shape, size, and proportions shown upon the drawings, and having done that he can put the whole in the relative positions shown upon the drawing, and having put his mental faculties into operation, and worked strictly to the drawing, the whole goes together as if it were a puzzle, and is a complete job, an harmonious whole. The man is delighted with the result of his labour, is a better workman afterwards, and his value to his employer is increased. From the moment he began that job to the instant he finished it, his whole soul and mind, as well as body, was intensely engaged upon it, and the silence of death is preserved in a shop where all are similarly employed. So intent is each one that the calls of nature are often unheeded, and "are you going to dinner mate?" "Is it so late as that?" "I didn't notice the bell," is often heard. Such a workman's life is one continual round of excitement. He does not count the minutes and think every one as long as an hour, nor does he, when he leaves, dread the resumption of his labour, and regard the workshop as a species of prison. He does not seek excitement, and muddle his brain with brutalising liquid at pouthouses. No, his whole soul is centred in his occupation, and he may be heard speaking of his achievements to his wife or his brothers. He will take her to the building on Sunday where the work is to be fixed, or when it is fixed he will point out his own productions with a feeling of exaltation. At eve, when he reaches his family he is not like an enraged tiger, and ill at ease with everything, and ready to curse his Maker; nor is he utterly worn out with the monotony of his labour. If he hears of other work and better pay he heeds it not, for it does not tempt him, for he feels wedded to his firm.

Now, I will trouble you with a few remarks upon the economy of space, and I have done. You will not deny that it is a subject worthy of consideration, in the centre of a town where every inch of space or ground ought to produce so much per annum. Such an important subject is this 'considered in London, that if a man were to keep his bench idle two and a half hours in the morning he would run serious risks of being dismissed. The Lancashire systems demand more space, and yet each man and each bench produces at least one-third less in the same amount of time than it does in London.

In conclusion, allow me to say that I cannot conceive a system more calculated to encourage strikes and advance the theories of the leaders of the unionists, than the one I complain of. They themselves could not possibly design better; but, on the other hand, the one I advocate is in every respect calculated to discourage these disastrous occurrences, and to frustrate many of the absurd theories of the unionists. The former enables them to do the least amount of work for the greatest amount of money. It places the masters wholly at their mercy, for if the "gangers" strike what use are the others? If the engine-driver ceases to work, what use is the engine? Mark the difference in the results of the London and the Lancashire strikes against the hour system. In the former it is firmly established, but in the latter, all hope of its establishment is banished. The difference in the systems alone account for this.

I have now stated the principal reasons why I consider that reform in labour, as far as regards joiners' work, is necessary in Lancashire.

In the course of these arguments I have spoken of ordinary men and boys, neither of which I have supposed to be above nor below the average in intellect. I have also used

the word system as regards Lancashire, more for the sake of brevity than anything else, because, strictly speaking, it is not a system at all. I might define it as an unsystematic confusion, or a combination of heterogeneous operations in which there is no rule, no check, nor anything positive or certain, but appears to be a reckless, hazardous, endless something leading to no reliable results. It may be described as a something which grasps at the shadow and loses the substance, and it resembles an army without discipline, a nation without laws, and a ship during a mutiny. Never was organisation more essentially necessary.

THE ALBERT OBELISK.

SIR.—It is not very easy to understand the reasoning of Mr. T. Roger Smith when he asserts the difference between a constructive and monolithic obelisk to be "the same in its nature as that between a plastic cast and a marble statue; between Portland stone and Portland cement."

Surely, if the material employed in a constructive and monolithic obelisk be the same, the one cannot be made, by any reasoning, a full size model of the other. It is not to be assumed that the designer of a constructive column will so use his material that any person viewing it will be deceived into believing it other than constructive. Thinking people, like Mr. Smith, would be horrified at such an exhibition of want of taste. But, on the other hand, the contemplation of a monolith, *per se*, can only be gratifying to the minds of the least educated portion of the public. Wonder would be excited, no doubt, but then it would be only that proverbially known as of nine days' duration, because the public prints will fully explain the means adapted for quarrying, carrying, and raising the monster, and with such means of estimating the value of the monument, the correlative will be, how in this age such a sacrifice, at the expense of judgment and taste, could have been made?

Of "sacrifice," I admit there would be more than enough, because the means, however large, must be limited; and if a large proportion be expended upon brute, or mechanical, force, there must be the less to spend upon educated taste.

The idea of a monolithic obelisk is essentially Egyptian, and it should not be forgotten that the Egyptian obelisks were always erected in pairs; and though it may be granted one of them formed an appropriate trophy when brought from its original site and erected by the conquerors of the land from whence it was removed, it was incomplete; and is anything but a fit model for our use.

Her Most Gracious Majesty may or may not have fixed notions thereon; and though to her expressed opinions we, as loyal subjects, should, doubtless, submit, I am convinced modern artists may be found who can produce a work that shall far transcend the Egyptian form, and that even without the sacrificial quality a monolith is assumed to express.

F. I. B. A.

TENDERS.

DWELLING-HOUSES, &c., TWICKENHAM.

For building eight small houses and doing sundry repairs to a house in Church-street, Twickenham, for Mr. George Scovell. Mr. Henry McCalla, C.E., architect.			
Todd	£2,800	James and Ashton	£1,493
Wright	1,934	Pugh and Wallis	1,425
Gydmann	1,925	Wingfield	1,250
Greenwood	1,760	Hill	1,162
London Building Company	1,500	Hill (without repairs)	1,082

CHURCH, STRETFORD.

For erecting the church of St. Humphrey de Trafford, at Stretford, near Man. E. Welby Pugin, architect.			
Easton	£5,650	Glaister	£4,770
Patterson	5,413	Simpson	4,502
Southend	5,040	Watts	4,350
<i>Presbytery.</i>			
Easton	£1,563	Glaister	£1,445
Patterson	1,095	Simpson	1,448
Southend	1,572	Watts	1,320

CONVENT, HEREFORD.

For the first portion of a new convent to be built at Hagley, near Hereford, for R. Bidolph Philipps, Esq. Mr. E. Welby Pugin, architect. Quantities supplied by Mr. M. S. Sharples.			
Simpson	£7,180	Smith	£6,435
Perkins	6,890	Houghton	6,275
Glaister	6,670		

SCHOOLS, ESSEX.

For new school-room for the Trustees of the Felstead Grammar School, at Felstead, Essex. Mr. Frederick Chancellor, architect, Pinner's Hall, Old Broad-street, London, and Chelmsford, Essex. Quantities supplied by Mr. Bartlett.			
Macey	£3,650	Emor	£3,220
Todd	3,357	Wood	3,073
Burrell	3,312	Palmer	2,763
Cushing	3,300	Rider	2,680
Corder	3,265	Brown	2,450

NEW BOW-BRIDGE, LEICESTER.

For the ironwork in the construction of the new bridge for the Highway and Sewerage Commissioners. Quantities supplied by the architect.			
Windsor Bridge Company	£828	Haywood	£555
Cochrayne	765	Pegg	420
Swingler	705	Pegg and Co	400
Stapp	643	Glasdon and Son	398
Handyside	630	Cliffe	392
Head and Company	600	Law and Sons (accepted)	360

BANK ALTERATIONS, STRATFORD.

The tender of Mr. Perry, builder, the Grove, Stratford, has been accepted for altering the premises on Stratford Broadway, for the branch bank of the London and County Banking Company. The front, we are informed, will be of white Suffolk malmes, with Portland stone dressings, and the bank will be opened for business on the 1st of May.

COMPETITIONS OPEN.

CHAPEL.

LEICESTER.—A premium of ten guineas is offered for the best design for a Wesleyan chapel, to be built in Leicester, capable of holding 900 persons. Architects wishing to compete may, upon application to Mr. H. Wale, 56, New-walk, Leicester, receive a plan of the site, and instructions and any other information required. The plans to be forwarded, carriage free, addressed to Mr. H. Wale, on or before the 1st May, accompanied with a sealed envelope, containing the architect's name, and bearing a motto corresponding with one to be placed on his design.

CONTRACTS OPEN.

BANK.

IRELAND.—For the erection of a bank house at Trim, for the Ulster Banking Company. Plans, &c., at Mr. W. G. Murray's office, 68, Lower Gardiner-street, Dublin. Tenders to be forwarded to the secretary of the Ulster Bank, Belfast, not later than 14th April.

CLUB HOUSE.

DUBLIN.—For intended alterations and additions to the Stephen's-green Club House,

according to plans and specifications prepared by John S. Butler, Esq., architect. To be inspected at his office, No. 16, Hume-street, Dublin, up to the 23rd of April, on which day proposals are to be furnished.

ASSEMBLY ROOMS.

STAFFORDSHIRE.—For the erection of the Silverdale Assembly-rooms. Drawings, &c., at the Silverdale offices, Newcastle-under-Lyne, size of room 60 feet by 38 feet. Tenders post-paid, to the secretary, on or before the 21st April, 1862, sealed and endorsed "Tender for Assembly-room."

ALMSHOUSES, &c.

KENT.—For the erection of thirty almshouses and a chapel for 240 persons, for the trustees of the Faversham Charities. Plans, &c., at the office of B. A. C. Erring, Esq., 1, Danes Inn, Strand, London; or also at the office of the architects, Messrs. Hooker and Wheeler, Breckley, Kent, from whom further information may be obtained. Sealed tenders to the office of Francis F. Giraud, clerk to the Trustees, South House, Faversham, on or before 10th April.

WORKHOUSE.

BIRKENHEAD.—For the erection and completion of the New Union Workhouse to be built at Higher Tranmer, Cheshire. Separate and distinct tenders will be required to be delivered for the building of the Receiving and Vagrant Wards, and also for the completion of the cellage under the main building. Drawing, &c., at the office of Mr. Thomas Layland, architect, 20, Castle-street, Liverpool. Sealed tenders to be delivered to Peter Gregory, clerk to the Guardians of the Birkenhead Union, 60, Lord-street, Birkenhead, endorsed "Tender for Workhouse," on or before the 12th April.

OFFICES.

STAFFORDSHIRE.—For the erection of offices in Queen-street, Newcastle-under-Lyne, for Mr. W. H. Dutton. Plans, &c., at the office of the said W. H. Dutton. Tenders to be delivered there on or before the 11th April.

BRIDGES.

SURREY.—For the erection of Flanchford bridge, over the river Mole, on the road from Reigate to Leigh. Plan, &c., at the office of Mr. Grantham, 7, Great Scotland-yard, London, S.W.; and at Mr. John Lee's, Reigate, Surrey; and the tenders, forms of which can be had, must be sent to Mr. Lee's office on or before April 11.

CHURCHES.

READING.—For the carpenter's and tiler's work to the roof of the Grey-friar's Church, Reading, and for the plumber's work, gutters, water-pipes, and for the drainage. Drawings, &c., with Ponton and Woolman, architects, 1, Grey-friars-road, Reading. Tenders to be delivered to the architects on April 14th, at 12 o'clock.

PARSONAGE.

SURREY.—For the erection of a parsonage, at Thursley, Surrey. Plans, &c., on application to the Rev. H. Branker, Thursley, near Godalming, Surrey, or to Mr. J. W. Pinfold, architect, 2, Charlotte-row, Mansion-house, E.C., of whom the quantities may be obtained, price 15s. each. Tenders (on a printed form), to be sent on or before 12th April, to the Rev. Henry Branker.

SCHOOLS, &c.

NORTHAMPTON.—For the erection of a school-house and residence, at Northampton. Plans, &c., at the office of the secretary, Mr. Fulford Vicary, at the Factory, Northampton. Sealed tenders, endorsed "Tender for Northampton School," to be sent to the secretary, on or before the 16th April.

DWELLING HOUSES, &c.

KENT.—For the performance of certain alterations and additions, including the erection of a new shop front, Bank-street, Maidstone. Plans, &c., with Mr. Henry Blandford, architect, Maidstone. Tenders sealed and endorsed "Tenders for Works," to Mr. Corke, on or before April 14th.

IRELAND.—For the erection of a dwelling-house, near the town of Bawnboy, co. of Cavan, according to plans and specification at the office of Mr. William Doolin, building surveyor, 27, Talbot-street, Dublin (where detailed bills of quantities may be obtained) up to the 14th April, when the proposals are to be forwarded, sealed and prepaid, to Mr. William Hague, Jun., architect, Cavan.

FARM BUILDINGS.

CUPAR FIFE (N.B.).—For the several works required in erecting and finishing a farm standing at Todhall, near Cupar Fife, the property of G. C. Cheape, Esq., of Strathgrym. Plans, &c., with Mr. J. Hall, 90, South-street, St. Andrew's; and tenders must be lodged with Stuart Grace, Esq., writer, St. Andrew's, on or before the 12th April. Contractors may offer for the whole works (which are extensive), or for any portion thereof. If the former, the sums for the different departments must be stated separately.

SALOP.—For the erection of a farm-house, farm buildings, and three cottages, at Walton, near Much Wenlock, in the county of Salop, for the Right Hon. Lord Forester. Plans, &c., with Mr. Robert Griffiths, architect, Bridgport, until the 19th April, on which day tenders must be delivered to the architect by 12 o'clock. Persons intending to tender to send their names either to the architect, or to his lordship's agent, William Thursfield, Esq., Barrow, near Broseley, Salop, so that a time may be appointed for viewing the site and plans.

RAILWAY WORKS.

LEVEN AND EAST OF FIFE RAILWAY.—For the construction of the extension of the East of Fife Railway, from the Kilmouchar Station to the town of Anstruther, either as a whole or in the following sections:—1. The Elie Contract, extending from the commencement of the extension near Kilmouchar Station to a point near Ardross Farm-house, and to about 4,325 yards in length. 2. The St. Monan's Contract, extending from the termination of Contract No. 1 to a point near the west boundary of the parish of Pittenweem, and to about 3,109 yards in length. 3. The Pittenweem Contract, extending from the point where Contract No. 2 terminates, to a point near the milestone at the west end of Anstruther-Wester, and to about 3,750 yards in length. The rails, chairs, sleepers, keys, and spikes will be furnished by the Company. Plans, &c., with the Secretary of the Company, at Leven, and the line is duly marked and staked out for inspection. Sealed tenders, either for the whole work or for one or more of the separate sections, distinguished by a marking on the envelope, must be lodged with the Secretary of the Company on or before 16th April.

MORAYSHIRE RAILWAY.—For the following contracts in connection with the Craigellachie Junction:—1st. Embankment Contract, commencing from Peg 0, at the Craigellachie Passenger Platform, and extending to Peg 33, being a length of 726 yards, or thereby, and comprising earthwork, fencing, permanent way-laying, ballasting, &c. 2nd. Spey Viaduct Contract, consisting of cast-iron cylindrical foundations, masonry, piers, and abutments, for one span of 200 feet, and three spans of 57 feet. The rails, sleepers, fangspikes, fishes, and bolts, will be supplied by the Railway Company. Drawings, &c., at the secretary's office, Elgin, from whom duplicate schedules and specifications may be obtained at 10s. each. The line is staked out at distances of every 66 feet. Sealed tenders addressed to the secretary, and marked "Tender for Embankment Contract," or "Tender for Spey Contract," as the case may be, must be lodged at his office on or before the 11th April, at noon.

CALEDONIAN RAILWAY.—For the construction of the Stonehouse Branch, about 4 miles 38 chains in length. Plans, &c., at the office, in Glasgow, of Mr. George Graham, the Company's engineer, where duplicate schedules and blank forms of tender may be had, price one guinea. An assistant engineer will attend at Stonehouse, on Friday, the 11th, at 12 o'clock, to accompany any intending offerers over the line. Sealed tenders, addressed to the secretary, at Glasgow, must be lodged with him on or before 28th April.

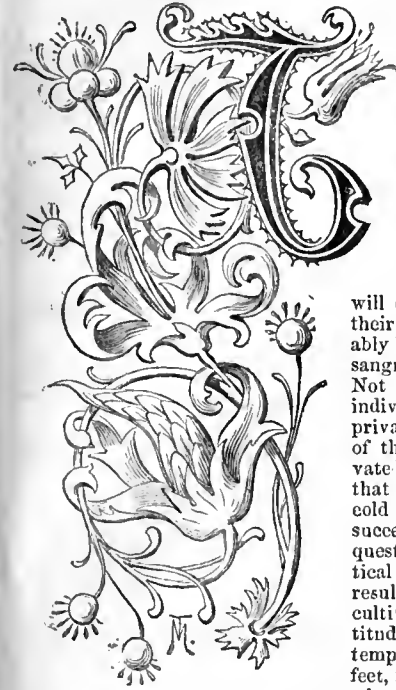
CAISSON.

FALMOUTH.—For the construction and delivery of a wrought-iron Caisson, for No. 2, Graving dock, Falmouth. Drawings, &c., at the offices of the Docks Company, at Falmouth, or of James Abernethy, Esq., M.P.C.E., 3, Parliament-street, Westminster. A printed form of tender will be supplied, which must be filled in and delivered at the offices of the Company, on or before the 18th April.

CHAMBERS' WORK ON CIVIL ARCHITECTURE.

SUBSCRIBERS to the BUILDING NEWS are requested to apply, by letter only, to our publisher, who will forward to them, free of charge, the remainder of the "Chambers' Supplement," with index and title-page.

THE ESTATE OF THE ROYAL COMMISSIONERS FOR THE EXHIBITION OF 1851.



THE disproportion between projected plans and what is actually accomplished is everywhere written on the pages of history. Nations and rulers from time to time essay great things. Seldom is it that they are not forced in the end to content themselves with a mere fraction of what they desired, and ruefully to count the cost at which that medium even has been obtained. There are few men of middle age but

will confess that the realisation of their pet schemes has fallen lamentably below the height to which their sanguine hopes once ardently soared. Not only is this the experience of individuals in the narrow details of private life, but, more strikingly so, of those who would fain have elevated the people, but have found that their words have been wasted on cold and inattentive hearers. Non-success, while probable enough in questions concerning social and political matters, is the almost certain result of all efforts which demand cultivation of the mind. If the multitude would slide into the groove so temptingly laid before their very feet, if they had eyes for what we, who wish to be regarded as their

teachers, insist upon, is their true interest, society would undergo a transformation hard even to imagine. Whether it be that this assumption of superiority on our part repels instead of attracting, or that the majority find an unconquerable dryness in all that relates to science and art, and are, consequently, slow to appreciate the advantages held out to them, or that the daily struggle for daily bread leaves little time and less relish for mental provision; certain it is that schemes which aim at the intellectual improvement of the mass, are too frequently miserable failures. Their birth-throes are separated by a brief interval from the moment of dissolution. Sometimes, if longer-lived, and fairly launched with favouring wind and tide, they founder in sight of shore, and sink to a depth far beyond all soundings.

Who, that hears the name of South Kensington, and looks on what was, within half-a-dozen years, fields and lanes, can fail to be reminded of the swelling project that emanated from the councils of the Royal Commissioners for the Exhibition of 1851? Who, that sees those bran-new stucco palaces, can help comparing this picture with that—the evidences of a brilliant commercial speculation with the proposal for concentrating all public institutions in one grand focus?

Not that the Royal Commissioners have, even now, altogether abandoned their first love; but, by little and little, their heart-hold has grown fainter and fainter, till, at last, they retain only fifteen acres applicable to a scheme that once appeared so vast and important as to demand ten times this extent of land. They may, perhaps, persuade themselves into the belief (as would seem to be the case) that, in one way or other, they really have done something towards carrying into effect the magniloquent design, which was conceived by them in the heated flush kindled by the success of the Exhibition in Hyde-park. They may point to the South Kensington Museum, and connect its existence and the creation of the Department of Science and Art with the animated aspirations that found a voice in their second report. Unhappily, the facts are against this view. The various art-schools and industrial institutions had a being, quite independent of the South Kensington Museum, which was added to them—not they to it—the whole being fused into a Governmental Department.

What are main features of management at Brompton? The purchase of objects of ornamental art, and a system of circulation. Both these methods of imparting public instruction were suggested by a Committee of the House of Commons in 1836. As far back as 1840 a considerable sum in one grant (£10,000) was voted to purchase examples of art for the Schools of Design. Improvements have, it is true, been grafted on the tree of knowledge that grows at Brompton. What wonder if its branches shoot out with vigour, when its roots are watered with £100,000 a-year!

However, let us do no less than justice to the Royal Commissioners, and hasten to admit that this illustrious body, in conjunction with the Society of Arts, formed an "Animal Produce Museum" on which large sums were spent; that they erected, at their own cost, the refreshment and retiring rooms, of which, when completed, they made a free gift to the Department; and that they also provided fittings for various sections of

the Museum.* But, in making this concession, little beyond providing a building site seems to have been added to the opportunities before enjoyed by the public—little, that is to say, as proceeding directly from the Commissioners.

To be told that the general taste has improved within the last ten years is to be told that England has not been standing still, but has marched on with the rest of Europe. What has this decennial period not done for architecture? Both schools, Classic and Gothic, will agree on this point at all events—that there has been progress of a decidedly hopeful character. Still, it would be difficult as well as invidious to point out any one in the profession who could be said to be the leader in the onward movement. Happy he who is content to share with others his renown, and thus attain the summit of dignity within reach of the true artist—humility!

It boots little to recur to what was once thought of and has now well nigh vanished, except that the threatened removal of the British Museum Collections has brought the Kensington Gore Estate prominently forward, and may, even at the eleventh hour, give a body to the will-o'-the-wisp that has eternally danced away from the feet of those who followed in its track. For this reason, then, we believe that it will be not uninteresting to pass in review the history of the Royal Commissioners' proceedings, and to learn the terms on which the nation may obtain a part of their estate for public purposes.

The year following that of the Great Exhibition, the green sward grew again over the area which the building had covered, and of its existence no trace was left but a pump and two blighted elms. The Commissioners found themselves embarrassed with a considerable surplus fund. Then it was that ambitious promptings stirred their minds, and they put forth a notable proposition, which was lacking in one most important requirement—that medium, by the aid of which alone is there any hope of erecting structures of a description more substantial than castles-in-the-air. They conceived a most comprehensive plan, which was nothing less than founding an institution that should extend over the British Empire the influence of science and art upon productive industry. This institution was to be established in the metropolis, and to be rendered, by various means, capable of affiliating local establishments in this country, in India, and throughout our colonies, for the purpose of spreading, as widely as possible, the benefits of its labours, and keeping up a constant interchange of information between the parent institution and the various bodies with which it was associated. Not only our own people and dependencies were to share in the advantages conferred, but, with true cosmopolitan spirit, it was laid down that the citizens of foreign countries should enjoy equal facilities.

In the midst of their sounding periods, misgivings appear to have shaken the minds of the Commissioners, and they expressed themselves sensible of the fact, that the sum at their disposal was altogether inadequate to the execution of such a plan as they were contemplating. The aid of the State, and of the public at large was absolutely necessary for its development and completion.

The first want was, necessarily, land on which to build, and this was found without much difficulty. It happened that a Commission,† appointed "to consider the question of a site for a new National Gallery," had reported in favour of the neighbourhood of Hyde-park and Kensington, and the Government had made some overtures for a piece of ground, situated at Kensington Gore. The negotiation was broken off, and the Commissioners (through the instrumentality of Mr. Kelk) obtained possession of the land for which the Government had been treating. This was known as the "Gore House Estate," and consisted of 21½ acres, with a frontage to Kensington-road of between 500 and 600 feet. The sum paid for it was £60,000.

Availing themselves of the ample powers conferred by the Crown in a supplemental charter, dated 2nd December, 1851, which allowed them to invest the surplus fund "in such manner as they might think fit," and to "hold lands and hereditaments in any part of her Majesty's dominions, and to apply or dispose of them" at their own pleasure, the Commissioners passed a resolution authorizing the outlay of a sum not exceeding £150,000 in the purchase of land (including their first purchase), on condition that the Government would engage to recommend to Parliament the contribution of a similar amount, for a separate, or joint account, or for division, as might afterwards be determined.

Having obtained an assurance of support from the Government, the Commissioners next turned their attention to the land adjoining the Gore House Estate, and bought 48 acres of the Baron de Villars for £153,500, paying down a deposit of £15,000.

In fulfilment of the promise given by the Government, the Chancellor of the Exchequer (Mr. Disraeli), brought the subject before the House of Commons (6th December, 1852), and Parliament granted £150,000. Eventually the Commissioners obtained a private Act to enable them to stop certain roads and make new ones on their property; and they resolved to advance a further sum of £15,000, retaining in their hands a balance of £21,000‡ for current expenses and contingencies. Application was made to Parliament for a contribution, supplemental to the original vote, and a grant was made of £25,000, which was subsequently increased to £27,500. Thus a total fund of £342,500 was raised, of which £177,500 was voted by Parliament, and £165,000 supplied by the Commissioners.

* Museum Building and Collection of Animal Produce presented to the Government, £7,476 12s.—Appendix N, Fourth Report.

† Lord Seymour, Lord Colborne, Sir Charles Eastlake, Mr. Ewart, and Sir Richard Westmacott.

‡ The Exhibition surplus was £186,436 18s. 6d.—Third Report.

The extent of land secured was 86 acres.

	Acres.	Cost (including interest.)	Average per acre (in round numbers.)
Gore House Estate....	21	£60,834 7 8	£2,900
Villars do.....	48	155,793 11 0	3,250
Harrington Estate and houses in Gore- lane.....	17	—	—
Total.....	86	—	—

Inconvenience having arisen from the joint tenancy as well as from inaction, the partnership between the Government and the Commissioners (in whom the legal title had been vested), was dissolved with mutual consent by means of a Bill, brought in by the Chancellor of the Exchequer and Mr. Spooner, and which received the Royal Assent, 12th July, 1858. Under this Act the lands of the Commissioners were released upon repayment by them of the monies granted in aid of their funds.

The monies set forth in the Act as due consisted of the Parliamentary grants before mentioned, together with a moiety of the net rents received up to 31st March, 1858, amounting to £3,879 4s. 2d., and made altogether the sum of £181,379 4s. 2d. Under clause 2 of the said Act the Government retained the piece of land, containing 12 acres, in the occupation of the Department of Science and Art, together with the buildings thereon, known as the South Kensington Museum. The value set on these twelve acres was £60,000, and the Royal Commissioners repaid the difference, or £121,379 4s. 2d., with a loan from the Commissioners of Greenwich Hospital of £120,000 at 4 per cent., on mortgage of their estate. In order to defray the yearly interest, the outlying portions of the property, four in number, and containing about 12 acres, in lots of, respectively, $3\frac{1}{4}$ *, $2\frac{1}{2}$, $5\frac{1}{4}$, and $1\frac{1}{4}$ acres, were let on building leases.

The estate is thus distributed:—

	Acres.
Retained by the Government for the Department of Science and Art.....	about 12
Lent to Horticultural Society.....	22
Lent to the Society of Arts for the International Exhibition of 1862.....	16†
Outlying pieces let for building purposes.....	12
Devoted to roads.....	9
Unappropriated.....	15
Total.....	86

The space which remains at the disposal of the Commissioners lies partly along Prince Albert's-road on the west, Kensington-road on the north, and Exhibition-road on the east of the main square. At the corner of Kensington and Exhibition-roads a small property of two acres, belonging to Lord Anekland, called Eden Lodge, intervenes.

The acreage of the unappropriated land is as follows:—

	Frontage.	Acres.
Prince Albert's-road.....	W. (about)	$6\frac{1}{2}$
Kensington-road.....	N. "	5
Exhibition-road.....	E. "	$3\frac{1}{4}$
Over the entrance to the Horticultural gardens, which would have to be arched over.....	W. "	$\frac{1}{2}$
Total.....		15

In a Parliamentary paper, ordered by the House of Commons to be printed February 15, 1860, is a report from a Special Committee of the Trustees of the British Museum. It is there assumed that a site can be had at South Kensington for £5,000 an acre. The joint ownership was cancelled in January, 1859, and from that time the Commissioners have had an absolute right to dispose of this land on any terms they please. When their attention was drawn to the above-given statement,† they considered what sum they would be prepared to take for these (or any portion of these) 15 acres, if application were made to them, and they decided to ask £10,000 an acre, and £5,000 per acre for that part—a quarter of an acre—where the necessity of arching over the ground under the agreement with the Horticultural Society would leave no ground floor space available. The marketable value of the land would, it is believed, be understated at £20,000 an acre; for a piece of about $2\frac{1}{2}$ acres, on the west side of Prince Albert's-road and south of Gore-road, is let on lease for 99 years at a ground rent equivalent to £20,000. Here the frontage was valued at £3 per foot by a depth of about 200 feet, and that on the east side of Prince Albert's-road is considered to be also worth £3, whereas the frontage to Kensington-road cannot be put at less than £4 a foot by 200 feet deep; so that, adopting the same proportion, the value per acre would actually be £26,000 or £27,000; and this for land which was bought ten years ago at £3,000.

The main square of the estate, bounded by the four great roads, contains about 55 or 56 acres, of which 53 belong to the Commissioners. The remainder, about 2 acres, is (as already stated) the property of Lord Auckland, and situate at the north-east corner, fronting to Kensington-road.

The property is laid out upon the principle of erecting buildings round the border only of the square, leaving the centre unbuild upon. The latter, to the amount of $22\frac{1}{2}$ acres, is let to the Horticultural Society on a lease of 31 years from the 1st of June, 1861, at a contingent rental if they earn profits. The lease is renewable for a further period of 31 years, on application being made two years previous to the expiry of the

first term. In case the Commissioners decline to renew the lease they are to pay to the Society, by way of compensation, a sum of not less than £15,000, and which, in certain contingencies, may be greater. The Commissioners, having undertaken to erect arcades and execute earthworks at a cost of £50,000, raised this amount by a second mortgage loan from Greenwich Hospital, at the rate of $4\frac{1}{2}$ per cent. interest.

The 16 acres lent to the Society of Arts for the International Exhibition, are granted, rent free, up to the 31st of December, 1862, and will be reserved for another Exhibition in 1872, on payment of £10,000. A plot, on which stand the picture galleries facing Cromwell-road, is let on lease for 99 years to the Society, on condition that the permanent buildings shall be used solely for holding exhibitions, that they do not cover more than an acre of ground, and that they have a sum expended on them at first of not less than £20,000, to be increased, if required, by the Commissioners, to £50,000, at the close of the Exhibition, in order to give the façade a suitable architectural character, and to avoid any disfigurement of the estate. The Trustees of the Exhibition subsequently obtained four more acres between the Horticultural Gardens and Prince Albert's-road, with the stipulation that they should build permanent walls to two arcades and a roof to the south arcades in place of the temporary structures which the Commissioners had agreed to erect. In consideration of the saving effected, the latter have agreed to credit the Trustees with a sum of £1,300, if the Exhibition of 1862 should yield no profit.

Mr. Bowring, in his evidence before the Committee on the British Museum, speaks of the cost of the estate as £5,000 an acre. It will be seen, from the items already given relating to the Gore House and Villars estates, that 69 acres were bought at rather more than an average rate of £3,000 an acre. With the plan before one, it is impossible to be blind to the fact that it is precisely the two just mentioned properties with which the public will have to deal, if at all. The nation could have had—indeed, did own—the Gore estate at £3,000 an acre. Granting that from first to last the cost has exceeded £5,000 on the average over the whole property; still, here is an advance of price to double the amount. We are to pay £10,000, and this (as we have seen) is half, or less than half, the marketable value.

The Commissioners say that they "offer the land at a lower price than the market value, because they consider the British Museum to be an important national institution. If Parliament wish to remove any part of the collections to Kensington, the Commissioners are anxious to afford every facility in their power, and feel that they should not deal with the question as a purely mercantile transaction." Yet the sum asked has something exceedingly like a "mercantile" look of 100 per cent. profit. The Government can most certainly be alleged to be perfectly free from any commercial taint, for they have evidently, somehow or other, made rather a dubious bargain in the public interest.

It should be borne in mind that the money spent on the Commissioners' estate has been applied in the most extraordinarily profitable manner. The outlying land is let on building leases for ground-rents which pay the interest of the loan from Greenwich Hospital. It is calculated that the fee simple of them would, if sold, produce £120,000. The main square is valued at £500,000. Here, then, we have the enormous amount of £620,000, exclusive of the 12 acres retained by the Government, and which are now supposed to be worth £100,000. The utmost penny that the estate has cost has been £382,051 13s. 9d.*

* We have been at some trouble to prepare the following:—

Account of the Receipts and Expenditure of Her Majesty's Commissioners for the Exhibition of 1851, from 29th February, 1852, to 31st December, 1860.

[Vide third and fourth Reports.]

		RECEIPTS.		£	s.	d.
1852.	February 29.	Balance from general account being surplus fund carried to estate account		186,436	18	6
1859.	January 12.	Value fixed by the Lords of the Treasury for the land retained by the Department of Science and Art		60,000	0	0
		Loan from Commissioners of Greenwich Hospital.....		120,000	0	0
1860.	April 27.	Loan from Commissioners of Greenwich Hospital.....		50,000	0	0
1859.	December 31.	Rents, &c., received to this day	£11,944	0	3	
1859.	January 12.	Deduct moiety of rents paid to Government up to 31st March, 1858. (Act 21 and 22, Vict. c. 36.)	3,879	4	2	
				8,064	16	1
				£424,501	14	7
		PAYMENTS.		£	s.	d.
1860.	December 31.	For purchase of land, leases, &c.	£313,904	16	8	
		For making roads and improving estate	15,184	7	2	
		For surveyors' charges, Parliamentary and law expenses	7,796	6	4	
				336,885	10	2
		For interest on mortgage loan.....	6,213	0	2	
		For loss on sale of Exchequer Bills	757	15	5	
				6,970	15	7
		For museum building and collection of animal produce presented to the Government		7,476	12	0
		For printing, office expenses, salaries, wages, &c.		4,877	3	1
		For repairs to houses	£ 323	16	8	
		For taxes on houses	1,417	16	3	
				1,741	12	11
		For outlay on arcades on account of contracts.....		24,300	0	0
				382,051	13	9
		By balance, cash, and securities		42,450	0	10
				£424,501	14	7

* A portion of this land (on which the houses called Queen's-gate-terrace are built), is exchanged for land belonging to Mr. Aldridge, in Kensington-road, eastward of Gore-lane.

† Four more acres were afterwards allowed to be temporarily taken for the annex.

‡ Founded evidently on the price allowed by the Lords of the Treasury for the space in the occupation of the Science and Art Department.

§ Probably this decision applies only to five acres, or thereabouts, which are talked of as required for the British Museum.

Our opinion as to the removal of any portion of the British Museum Collections to South Kensington has been so recently given that we need not here repeat our objections. It is very possible that we have been looking at the silver-side of the shield—from the point of the shilling public. Truly, to pass over to the golden-side—shall we say with the guinea folk?—is to be sensible of a decided change in the effect produced on the mind. What can be more agreeable and delightful than to drive from the Park to the Horticultural Gardens, and stroll through the grounds in genial summer weather, of which, in the budding leaves, we begin to recognise the promise? When satiated with the gardens to lounge and eat ices in the arcades, and thence to pass to the picture galleries in Cromwell-road; or, if the Natural History Collections shall be transferred to Kensington-gore, to gratify yet another taste: how very pleasant is all this! Let us not omit the South Kensington Museum, with its multifarious objects. Then, if the National Gallery can be moved to the same spot, and present towards the Park its (undesigned) grandiose front, we know of no aristocracy that would be so well provided as our own with all that appeals to the finer and more cultivated feelings of a humanity, which (we could almost doubt that) they share with the toilers and workers of London.

Be it so. But let us make no pretence about consulting public convenience. Why not boldly confess that we held a Great Exhibition; that a large surplus fund was built up of the contributions of the people; that we talked and pottered, pottered and talked, till, at last, we contrived the most charming places of recreation for the idle and the wealthy within the closest neighbourhood of their usual gay haunts; that we went to Parliament and charmed to sleep the senators, who, though they arrogate to themselves the title of the people's champions, yet raise their bold voices in any and every place but the right one; that we moved our national collections of pictures and natural history; and, more than all, that we actually succeeded in making everybody believe that we could do and did all these things for their benefit, not in the interest of a section, but in that of the whole public?

Our columns may yet have to record the successful, though gradual, prosecution of these schemes which appear to be ripening. When we remember the weighty names and high influence that can and will infallibly be brought to bear, the issue seems no longer doubtful. Well, we shall have had the satisfaction of having uttered one protest, and shall enjoy the consolation of knowing that, to the last, we denied and denounced the *invention* of the centre of London.

NOTES FROM THE PROVINCES.

Hereford.—The Corn Exchange of this City has just received the addition of a clock turret, fitted up with illuminated dials. The upper portion of the turret contains the bell, and is surmounted by a figure of "Ceres." The total cost of the works is about £250. Messrs. Elmslie, Franey, and Haddon, architects, designed and superintended the works, which were executed by Mr. Beavan.

The Mersey Docks.—On the recommendation of a special committee the Mersey Dock Board on Thursday agreed to construct new warehouse for the corn trade, and new graving docks on the Merenlaneum estate, at a total cost of £261,000.

Nottingham.—The directors of the Ancient Order of Odd Fellows, some time since, determined on erecting an Imperial Hall for the purposes of their Order in Nottingham; the building to be also available for musical concerts and public assemblages. The site selected is at the junction of Sheep-lane and Upper Parliament-street. The frontage to Parliament-street will be upwards of 140 feet, and to Sheep-lane 160 feet. A by no means inconsiderable advantage which the building of the hall holds out, is the opportunity of improving the approach to the Market place. The building is to be Italian in character, having pavilion-roofed turrets at the corners, enclosing the staircases—of which there will be four. The principal front will have on the ground story an arched entrance of three openings, leading to a vestibule, given access to the two principal staircases. In the east front, there will be eleven shops, divided by rusticated piers, from which spring semicircular arches. The division between the ground and upper story, is marked by a Doric cornice, with carved consoles, and triglyphs. There is a series of eight Corinthian pilasters and columns on the upper story of the Parliament-street front. The towers rise somewhat higher than the adjoining balustrading. The roof will be a conspicuous feature. The ridging of the main roof having open iron work, partly gilt. The whole exterior will be faced with the best pressed bricks and Hollington stone, the latter predominating. This stone has been decided upon as being not affected by the acids of the atmosphere of towns, and as being very durable. As to the interior: on the ground floor, occupying the space not devoted to the shops, will be a room capable of accommodating four hundred persons, and not less than seventeen feet high. The rest of the space not occupied by staircases will be divided into rooms available for the purposes of the order. The accommodation in the upper story will consist of a large room, capable of seating 2,500 persons, and about 140 feet long by 60 feet wide. At the south side there will be a recess for the organ; but the orchestra will not be recessed. On each side of the hall there will be a gallery which, at the Parliament-street, or north end, will extend over the entrances from the staircases. The front of the gallery will be curved. The orchestra, instead of being entered from below, will have the approach from the gallery staircase, at the south end. The ceiling will be slightly coved at the sides and ends, and deep panels and projecting mouldings will be avoided, "so that nothing will impede the transmission of sound in smooth unbroken volume to the furthest parts of the hall." Mr. Bakewell is the architect.

THE ALBERT STATUE AT LIVERPOOL.—We mentioned some time ago that the Corporation of Liverpool had voted a sum for an equestrian statue to the late Prince Consort. The commission to execute this work has been given to Mr. Thornycroft.

MEDIEVALISM AND BEAUTY.

BEAUTIFUL, undoubtedly, are the Medieval works. There is beauty in their plans and general forms; there is beauty in the most characteristic and prominent features, such as the pointed form of their arches and the intersection of the ribs of their vaulted roofs. Springing from the stem-like vaulting shafts, and gracefully bending, like the leaf-laden boughs of a tree, to meet each other half-way, beautiful are the leafy bosses which adorn the union of these meeting members; beautiful are the tiles that lie beneath our feet as we solemnly enter the church; beautiful is the glass, saint enriched, that fills the windows above the stalls; beautiful, on the whole, is the carved foliage that adorns the capitals and other parts of these wonderful buildings; beautiful is the expression and religious sentiment of the sculptured figures. That all these things are beautiful, no one can feel more than I do; but yet in this present age it is useful to point out that, in taking old work or old principles as examples, we may have Medievalism without beauty, and that in designing a Gothic building we have a choice to make. And what is that choice?

A few years ago we necessarily were bound not to design any building so as to use any ornaments in the details for which we could not find a precedent, for we were then learning the true spirit and feeling of the style. We now, having accomplished a great degree of perfection in copying or reproduction, have arrived at taking rather the principles than the actual ornaments. We design, *i.e.*, really originate, new forms of buildings with new forms of ornaments in the Gothic manner; this is our present position. What is, then, the choice which each of us, in designing such buildings, has to make? It is in the property or qualification that the building shall possess when it is finished. Will our end be fully accomplished when our building is finished, when the last scaffold is removed from above the spire, if that building is in every respect, as regards its spirit, its kind of ornament, its general effect, its proportions, a Gothic building? Or shall we be not satisfied unless every form, every detail, every sculptured figure, every carved leaf, pleases us as artists; every colour not according to some ancient rule, but in accordance with the very latest investigation of the harmonies of colour, and the laws which cause beauties of colour in nature? Or, in other words, our choice lies between Medievalism and Beauty.

Are we such strict antiquaries that the style of ornament that pleased the architects of the thirteenth century necessarily pleases us? or are we so keenly alive to the beautiful that we quickly see that in designing a similar building to those that have been built before, beautiful as they are, that there is yet room for improvement? And so, wherever the two things—correct Medievalism and artistic beauty—seem to clash, we should instinctively throw over the Medievalism to obtain the beauty.

In visiting some of our best nineteenth-century Gothic buildings, I think few unprejudiced observers can come to any other conclusion than that in many beauty is certainly sacrificed to Medievalism, and that even in the most beautiful and the most original of such works that great improvement would have been seen if many of the ornaments had been submitted by the designer to the test of his own unbiassed taste and artistic genius as to whether they were really beautiful, and not at once admitted into his building without examination because strictly in accordance with Medieval principles. To explain, perhaps, more clearly what I mean, let us take a few of those architectural features that are more particularly open to the loss of the beauty they might possess, on account of either the habit, or the deliberate choice of Medieval example in their forms, in negligence, or in defiance of the pursuit of beauty.

Take the capital of a column or pier, even in so important a position as supporting the chancel arch. Artistic feeling would say, choose the most beautiful, the most pure, the most holy forms in earth or heaven for such a position, and, indeed, in many great examples Medievalism says and does so too; but in other instances Medievalism says, put two ugly monsters entwined together, singularly ugly and inappropriate for ornaments to capitals at all, especially in the place that I have mentioned, yet in some modern cases beauty and feeling have been rejected and the quaintest Medievalism chosen.

Is it window tracery—an architectural feature unusually capable of beautiful treatment, and affording wonderful opportunity for original and artistic design? How often do we see buildings, otherwise beautiful, disfigured by forms of window tracery having no artistic beauty at all, and no merit at all, except being similar in actual form, or else in principle, to those in some inferior Medieval building, for we cannot shut our eyes to the fact that Medieval buildings were liable to be good and bad in some degree, even if by the traditions or means of handing down the art the varieties of work were not so great as they are at present.

In plate tracery especially the artistic feeling for beauty of outline is more particularly called into play; the forms of the bright flowerets, or stars, filled with many-coloured glass, are very important when seen from within the church; and the form of the dark stars or flowers, as seen from the exterior, require all the careful and experienced skill of the artist. I do not say that you will not find some of the very best and most beautiful forms for these purposes in Medieval work, but I do say that if you are in the habit of taking any form from old examples, without sufficiently considering whether they are beautiful, or have sufficiently determined to make beauty your object in the selection, you are very likely, owing to your antiquarian prejudices, to produce a result which will be quite the reverse.

Then, with figure sculpture, no doubt that Medieval expression as found in the sculpture of those times is good; no doubt but that it is, in its deep religious feeling and purpose, a thousand times better than that of the

later Renaissance; when it became the fashion in all works of art, as Ruskin truly says, to deny Christianity. No doubt but that sculpture, like that of old, with all its crudeness and faultiness of proportion, was a thousand times better than the most refined works of sculpture of a few years ago, when pagan subjects were still the fashion, and the denial of Christianity in all matters of art was equally apparent.

No doubt we ought to welcome with joy, not only the revival of Gothic architecture, but the revival of the good old habit of offering our best gifts of art and of skill to the service of religion. We now once more have begun to give to that service our most precious materials, our deepest thought, our most careful study of old works, and our greatest genius in the designing of new buildings in the olden manner. Can we not, then, bring our very highest powers into this service, our imagination, our highest appreciation of natural and artistic beauty.

During the time that Gothic, or purely Christian, architecture slumbered, there is no doubt, that in spite of the true end and purpose of art having been lost, that great perfection was attained in painting and sculpture by the diligent study of the antique. Can we, now that our minds are again set in the old paths, gain nothing of beauty and perfection of figure design from those intervening ages? When the Romans became Christians, they cast their eyes around the imperial architecture of Rome to see whether anything could be consecrated to the service of their new faith. They rejected the temples that had been used for heathen worship, but they chose the beautiful basilicas and converted them to their own use. So, then, in Gothic sculpture, let us firmly retain the religious expression—let us, in painting and sculpture, more than we ever have before, consecrate our talents to sacred subjects. But why our apostles and saints should not be as correctly and naturally proportioned, why they should not be as beautiful in form or countenance as Apollo and Venus; why they should not engross the time, attention, and talents of our greatest sculptors and painters, I know not. Let us reject the pagan subjects, but not the pagan knowledge of form; let us leave the Greek poets, but not the Greek love for poetry and poetic feeling; let other subjects but the Goddess of Beauty engage our chisels and our pencils; but let us not lose the ancient love for beauty. Grasp firmly Christian feeling, Christian expression; let us hold firmly the love of truth; but surely it does not show our love of nature, or of the great Author of it, to imply—as much of our art at the present time seems to do—that, to be true to nature, we must reject the beautiful. Singular is it, in the sister art of painting, that a rejection of the highest forms of beauty and imagination should have come in simultaneously with the greater love and closer study of nature. It seems to me that it is because the painters of the reforming school base their principles too much, even to a blind imitation, on the old manner of the masters before Raffaele, instead of merely introducing as a reform a more genuine and careful study of nature, without mixing up the pre-Raffaeleite masters in the matter, and so giving scope for the error of introducing many of their shortcomings along with the increased study from nature. Certain it is that a great and blind antiquarian love of any bygone style is always destructive to the artistic and progressive development of any art. A love that will not brook any alteration—a love that is sure to think any design beautiful simply because it belongs to that style, without any careful analysis of its own individual merits, must necessarily make us put much into a design that the old designers themselves, very probably, were not satisfied with, and which they would not, probably, repeat, if they had the opportunity of designing it again. It is, indeed, very well to study and be perfectly acquainted with all the styles that have prevailed before our time; it is better still, in my opinion, to be still more perfectly acquainted with one particular style or section of a style, and to practise in it; but we should take care that our being antiquaries does not interfere with our being artists, and that our power of discriminating at a glance whether this or that detail belongs to this or that style, or whether it is correct to use it, does not bias our artistic judgment as to whether or not it really looks well and pleasing in its place when we have used it—or, in other words, whether, while it is in correct accordance with the chosen Mediæval style, it is really beautiful.

For, although granting that Mediæval work of the best periods is mostly beautiful, I cannot give in to the dictum that, because it is old, it must be beautiful. Let us lay hold of the leading principles, because, when used before, they certainly produced beauty, and therefore will, if artistically followed, produce it again. But let us use our individual talent and judgment, so that progress and development may be the result, and that each building raised may be more beautiful than the last. And, as one source of great beauty that is much neglected, I would ask why, in so many of our modern buildings—although the Oxford Museum is an honourable exception—while the style of Mediæval art in which the window traceries and many other details are most beautiful, is more followed at the present time than any other, the Mediæval example of that style is not followed of decorating the carved portion of the building with natural foliage instead of a quaint conventional form.

In our English buildings of the time alluded to most beautiful examples of natural foliage may be seen, so that it would seem that, where Mediævalism and undeniable beauty go hand in hand together, then, and then only, it is departed from. The truth and honesty of purpose in the material of our best buildings at the present time is highly commendable. The purest style of Mediæval art is, for the most part, selected. So far, again, it is well. We have begun to produce buildings differing greatly from all that have been built before, and essentially our own. That, again, is good. We are now introducing much both of painting and sculpture into our buildings. That is a subject for congratulation; but still many a building is undoubtedly marred by the severe and hard conventionalism

in figures, drawing of coloured decoration, painted glass, and carved foliage, and we still have in many instances to regret that in these particulars much of the beauty of the building is often sacrificed to Mediævalism. R. D.

RAILWAY EMBANKMENT TO FRANCE.

"NEPTUNE," writing to the *Whitehaven Herald*, proposes—"An embankment carried across the Channel, formed of rocky and rubble materials, obtainable in plentiful abundance on the coasts of England and France, adjacent to the site for the work, appears to me the soundest scheme; and as the surplus labour available in the Western States of Europe and of all Great Britain would be forthcoming for such an undertaking, the cost of constructing it, though a mighty work, would not be so serious a matter as may at first appear. The sectional form of the embankment should not be exactly that of ordinary railway embankments. It would have a level flat surface for the various lines of rails of different companies, which would be about 30 feet above the level of the sea at high water, and having a mound of rock on each side (their use being obvious) 20 feet high, and 40 to 50 feet at the base, and angular, or parabolic shaped. The level flat surface for the railways would be a mile across, from inside of mound to inside. The sides of the embankment would slope down into the sea at an angle of 45 degrees at level of high water, and, spreading out as they approach the bottom, would afford ample space for the raging billows rolling along the Channel during a winter storm to expend their fury. There would have to be a lofty lighthouse, either in the centre of the embankment, showing a revolving brilliant light, or a lighthouse on each side, one showing a red and the other a green light, stationary. The site for the embankment would be chosen as nearly opposite to the boldest points of the rocky acclivities of the two coasts as practicable, with the object of carrying a cutting through for the lines of rail, which operation would be the commencement of the undertaking, as it would afford a large amount of rocky material with which to start the embankment. I am bold to say that if the French and English Governments once granted their approval and consent to the scheme, and would further proffer their assistance of the most skillful engineers and sappers and miners, together with a troop of the most reliable and energetic portion of their unoccupied armies, in conjunction with a small army of labourers collected out of the various states and provinces of Western Europe and Great Britain, and further, if the two Governments would engage to provide the requisite appliances and an unlimited supply of powder out of the stocks lying in their various arsenals, I am prepared to say this important undertaking would be carried out to a successful issue at comparatively a very moderate cost in the short space of six or seven years from its commencement. The arrangements, of course, should be all made under the guidance and management of eminent civil engineers of this country and France. After carrying the cuttings through, say two miles to three miles wide, until they find a proper level inland for joining the various lines of rail on the continent, and within certain limits, and calculating how far the operation of quarrying and exploding the rock would be required to obtain a sufficiency of material to complete the work—the solid contents of the rock required to make the whole embankment being known—the measurements would then be easily taken of the adjacent cliffs to find out the extent it would be required to prosecute the quarry operations to furnish the material. The next operation would be quarrying laterally to the direction of the embankment upon the edge and parallel with the two sea coasts, and until the embankment was finished. It is a very simple calculation to ascertain to what limit these quarrying operations should be extended, knowing the solid contents of the material required to complete the undertaking. The iron rails now in use on the lines of this country and the continent are not of sufficient strength and substance to convey the weights that they would be required to bear; and it would be, therefore, necessary to have manufactured rails of, say fifty to seventy-five per cent. larger sectional area. The tilt waggons and locomotive engines would have to be of a ponderous description in size, strength and power, to convey the immense weights they would be required to carry over the embankment. Powerful cranes would also be required to lift the immense masses of rock that would have to be conveyed along the line to the sea coast and along the embankment to be deposited on the bed of the channel.

As far as I have gone, the first thought that will strike the reader is the fact that the passage of the channel for shipping is completely blocked up. To obviate the inconvenience thus occasioned to the free navigation of shipping through Dover Straits, I have next to propose that we make what I shall for my present purpose designate double harbours of refuge on both sides of the channel, the sites of which should be at the extremities of the embankment somewhat inland. The harbours would consist of a basin on each side of the embankment, for admitting the vessels arriving from the Atlantic or the North Sea side of the channel, until they gain admittance into the floating dock. The latter would be made inside of the basins, and at each side of the embankment, say about one mile apart, or in a line with the mounds, and being joined by a lock of sufficient width to allow shipping to pass of the largest tonnage. The use and object of these harbours is then explained. To further develop the idea, the writer says, a Grand Trunk Railway would be the next operation, carrying it across Europe, through Belgium and the southern districts of Germany, making a boring through the Alps range of mountains, and crossing Turkey in Europe, passing the Bosphorus, through Turkey in Asia, across Persia, Cabool, and, going near the southern base of the Himalaya mountains, continued on to China as far as Peking. The amount of wealth required to work out this vast scheme no doubt may be a great obstacle to its present achievement, but the day is not so very far distant when it will be a work of sheer necessity from the force of circumstances now arising.

THE NEW STREET IN SOUTHWARK.—A return has been issued showing the date of all purchases made by the Metropolitan Board of Works of property required for the purposes of the new street from High-street, Southwark, to Stamford-street, and the sum spent, together with many other particulars relating to the purchases. The aggregate amount of purchase money paid is £372,954. The sums paid for land tax amount to £339. The aggregate amount of interest paid by the Board on money borrowed for the purposes of the new street is £31,892.

MARC ISAMBARD BRUNEL.*

MARC ISAMBARD BRUNEL was born at Haequeville, in Normandy, on the 25th of April, 1769. The name, says his biographer, is found at every period in the ancient records of the province, and the privilege of *Maitre des Postes* of the district seems to have been an inheritance of the family. At eight years of age, and shortly after his mother's death, he was sent to the College of Gisors, it being intended that he should succeed to a living in the gift of the family; but his evident dislike of this life, and the predilection he always evinced for mechanics and construction induced his father, most unwillingly, however, to send him to a friend, M. F. Carpentier, at Rouen, under whose directions he then first studied drawing and hydrography with the view of qualifying him to enter the navy. We learn nothing of Brunel's life from 1786 to 1792, except that he "seems to have been actively engaged in his profession;" but in 1793, when the reign of terror commenced, he with difficulty obtained a passport to America, and sailed from Havre on the 7th of July, landing at New York on the 6th of September. Finding here the French squadron, he joined the company of M. Pharoux, an architect and surveyor, and M. Desjardins, who were then organising, on the part of a French company, the survey of a tract of land near Lake Ontario, of over 220,000 acres. These three, supplied with a few axes and fowling-pieces, and accompanied by four Indians only, set out to explore and map a region previously scarcely known.

Mr. Beamish has been unable to furnish us with any correspondence or notes relating to the undertaking, and we next meet with young Brunel on his return to Albany and New York. During the return journey the three travellers made the acquaintance of a Mr. Thurman, an American loyalist, who engaged them to survey a line for a canal to connect the river Hudson with Lake Champlain. This, says his biographer, became the turning point of Brunel's life. He had intended to return to his own country should tranquillity be restored and a constitutional government be established; but fortuitous connection with Mr. Thurman determined his destiny—"France and her brilliant naval service was abandoned for America, and the humble profession of a civil engineer."

The direction of operations devolved on M. Pharoux, but that gentleman soon resigned in favour of Brunel, who, in his new capacity of director, turned his attention to the improvement of the navigation of rivers. Here his natural bent of mind greatly aided him, and "his ingenuity soon suggested the means of freeing their beds from masses of rock and embedded trees, and, by lateral cuts, of evading falls and cataracts which rendered navigation not only dangerous but often impracticable." He may, therefore, continue Mr. Beamish, be considered as the pioneer of those great inland communications which have tended so largely to promote the commercial prosperity of the States.

Having thus, "in less than twelve months, achieved a name and secured an independence," Brunel prepared drawings in competition for new council buildings, and his designs were accepted, but, owing to the cost of carrying them into execution, the scheme was abandoned; soon after plans were required for a theatre in New York, and, with considerable modifications of the former design, Brunel's were accepted. The work, however, failed to procure him any direct pecuniary benefit, and the building was destroyed by fire in 1821.

Brunel was next appointed Chief Engineer of New York. There exists no record of his practice in that city, but it is said that he received but inadequate reward for his services, notwithstanding which he declined to accede to invitations to return to his own country. Among the subjects to which he first directed his attention during his stay in America was the manufacture of ships' blocks by machinery.

On January 20, 1799, Brunel sailed from the American shores bound for England, landing at Falmouth in March following, here, soon after, he married Miss Sophia Kingdom.

Brunel took out his first patent in England in May, 1799, for a "duplicate writing and drawing apparatus"—what is now termed a manifold writer; in principle it resembled the pantograph. Soon after he invented a machine for twisting cotton threads and winding it into balls. It was very generally adopted, but as it was not protected by a patent, the inventor received but little remuneration. He also, about this time, devised a little machine for the use of indolent whist players, by which the cards were, by simply turning a handle, effectually mixed, divided into four equal parts, and presented to the players. This machine was given to Lady Spencer.

Mr. Beamish next advances, at some length, Brunel's claim to be the author of block machinery,—an honour which has been claimed for Sir Samuel Bentham. To this point the author devotes some forty-five pages in vindication of his hero's rights. He says "Where fifty men were necessary to complete the shells of blocks previous to the erection of Brunel's machinery, four men only are now required; and that to prepare the sheaves, six men can now do the work which formerly demanded the labour of sixty. So that ten men can accomplish with uniformity, celerity, and ease, that which formerly required the uncertain labour of one hundred and ten."

In 1805 Brunel suggested an apparatus for bending timber, and took out a patent for sawing timber in an easy and expeditious manner. The improvement consisted in the modes of laying and holding the piece of wood in the carriage or drag; in the facility of shifting the saw from one cut to another; and in the practicability of sawing both ways, either

towards or from the saw. In the following year he patented a machine for cutting veneers, and in 1808 a circular saw.

In the same year he received a grant of £4,500 for services rendered to the Royal Arsenal, Woolwich, and removed to Lindsey-row, Chelsea, having erected at Battersea saw mills, in which he invested all his available money, with the hope that he had thereby secured a provision for his family and his own declining years. This hope, however, was not to be realised.

Brunel next took out a patent, 1810, for improvements in obtaining motive power, and in 1811 submitted a comparative statement to the Navy Board, which exhibited the importance of substituting machinery in the dockyards for the handwork then employed. We next find him actively and successfully employed in superintending works at Chatham; then in the development of a scheme for making shoes for the army, in which he invested large sums of money, the greater part of which was lost, owing to a reprehensible want of decision on the part of Government and the conclusion of peace.

In 1814 he made his first experiment on the Thames, with a double-acting marine steam-engine. Having accomplished his voyage to Margate he was desirous of obtaining accommodation for the night, but this was not so easy. So strong was the prejudice which the new mode of transit excited in the minds of the inhabitants, particularly those connected with the sailing packets, that, blind to their future interest, they threatened personal injury to Brunel, and the landlord of the hotel absolutely refused to provide him with a bed. Twenty-two years later, on visiting Ramsgate on business connected with the proposed railway, he wrote to Mr. Beamish:—"If they knew at this moment that I come to carry off the cargoes of the steamers to Ramsgate, I might probably share the same fate."

Brunel seems to have been always devising and inventing, and we next find him engaged in designs for a bridge over the Neva, at St. Petersburg, in which he proposed to construct a framing of carpentry capable of forming an arch 880 feet span. The condition of the Imperial treasury, however, prevented its being carried into execution. The design is shown by Mr. Beamish in a plan and elevation.

By this time the sawing establishment at Battersea had fallen into inextricable confusion as regards financial matters, and in August, 1814, a fire broke out, which in two hours nearly destroyed works which had been valued at £24,000. Brunel's resources, however, seldom failed to assist him, and the right wing of the building and the steam-engine having been saved, he at once sought for means to repair his great loss; this was not so readily obtained, for out of a capital of £10,000 in October, in June following there remained but £865. But "still relying," says Brunel, "upon the pecuniary aid I could bring in, I pushed the enterprise without interruption. Availing myself of the experience I had acquired, I directed my attention to all the improvements that could be introduced consistent with our scanty means." But many a "sad to-morrow came and went" before he received substantial relief, which at last came in a grant of £5,000 from Government.

Restored to his home, says Mr. Beamish, with a heart grateful for the liberality which had been accorded him, we find him resuming the general supervision of the works at Chatham, and in designing, under the authority of Government, saw-mills for the Island of Trinidad. Soon after, 1821-22, a commission was issued by the French Government to obtain designs for suspension bridges, to be erected on the Island of Bourbon, and Brunel was applied to. The span to be crossed was only 122 feet, but the locality was subject to "hurricanes moving with a velocity of 120 to 150 feet in a second, to resist which his ingenuity, in the absence of authority, was sufficiently taxed. The designs were accepted by the French Government, and a contract was concluded between Brunel and the French Minister for £7,000, the work to be executed in four months. But here the same fatality which had already marred Brunel's commercial prosperity was found still to cling to him. From various causes the work was delayed, and Brunel, in December, 1822, entered a formal protest against the breach of contract, "thereby," he says, "subjecting me to great loss and injury, and to have the bridge, when completed, rejected." Brunel records in his journal, 15th January, 1823—"The cold so intense that cast iron 15 inches by 10 inches was broken."

Passing over several years, during which Brunel was as actively employed as ever in devising various contrivances, we come to the "great and final effort of his ingenuity and skill"—the Thames Tunnel. In 1818 he took out a patent for a machine of iron, forming anger-like cells for the miners, and which should be forced forward with a rotary motion by hydraulic presses, displacing only so much ground as the machine would occupy in its place; and in 1824 the first general meeting of the promoters of the tunnel was held in the London Tavern, when 2,128 shares of £50 each were taken up. Brunel was appointed engineer to the company, with the salary of £1,000 per annum for three years, the period which it was considered the work would take to complete; and in addition to his salary he was to receive £5,000 when the body of the tunnel was carried sixty feet beyond each side of the river, and a further sum of £5,000 when the first public toll under the Act of Parliament was received for the use of the proprietors. Mr. Beamish, who assisted Brunel in the work, gives a detailed account of the progress of the work, with all its successes and failures, from its commencement until it was opened to the public on the 25th March, 1843. Within fifteen weeks from that date "upwards of one million of visitors had done homage to the directing spirit of the Thames Tunnel." Brunel had, however, succumbed to the long and uninterrupted strain on his faculties; paralysis had already exhibited itself; and although he was able to be present at the opening ceremony, and lived until the 21st

* Memoir of the Life of Sir Marc Isambard Brunel, Civil Engineer, Vice-President of the Royal Society, corresponding member of the Institute of France, &c., &c. By RICHARD BEAMISH, F.R.S. 8vo, pp. 359. Longman and Co.

December, 1849, his professional labours terminated with the completion of his greatest work.

There are some pages in Mr. Beamish's volume which we would rather see expunged in a future edition, but he has given us many interesting details of Brunel as an engineer.

ON RETAINING WALLS.

At a meeting of the Civil and Mechanical Engineers' Society on the 27th of March, 1862, Mr. WALTER RUTT read a paper on Retaining Walls, in the course of which he said a retaining wall may yield bodily in three ways:—

- 1st. It may turn over, revolving forward upon the foremost point of its base.
- 2nd. It may slip forward, while still retaining its erect position.
- 3rd. The earth may yield to the pressure of the superincumbent weight.

The same three things may occur within the substance of the wall itself, viz.:—

- 1st. A portion of the wall may break loose from the lower part and fall forward.
- 2nd. The upper part may slide upon the course below it.
- 3rd. The material of which the wall is composed may be crushed by the pressure.

The effect of the earth upon the wall was then treated of, it being considered that the prism of earth between the wall and the line of rupture had a tendency to slide down the line of rupture, as down an inclined plane, thus exerting a pressure upon the wall at one-third of its height parallel to the line of rupture. By setting off a length in this direction to represent the pressure, and a vertical length to represent the weight of the wall, the resultant pressure upon the base is found. If the centre of pressure fall within about three-eighths of the width of the base from its foremost edge, it may be considered a safe proportion. The farther back the centre of gravity of the wall lies the farther back will be the centre of pressure, thus showing the advantage of giving a batter, and especially a curved batter, to the wall. By considering each point in the height of the wall as the base of a distinct wall, it will be seen that the wall may taper off to a point at the top, giving a triangular profile.

To prevent the courses sliding upon one another it is best to lay them square with the batter, sloping slightly downwards towards the back; an inclined base will also prevent the foot of the wall from being pushed forward upon the earth below it. The yielding of the earth below the foundations is a frequent cause of failure, which should be guarded against by extended footings, or, in bad ground, by the use of piles. A very good example of this is seen in the quay wall at Rouen, which stands on a bank of soft mud, the river deepening rapidly in front, and is supported upon a system of piles braced together by transverse timbers.

Thus far walls of uniform section only have been considered; but, by the use of counterforts, the centre of gravity may be thrown further back, and an increased strength be obtained with the same materials. Care must be taken to insure a perfect bond between them and the body of the wall; or, as in the case of the Old Hunger Dock, the latter may be forced forward, leaving the counterforts some feet behind. A still greater advantage is gained by placing the buttresses in front, or by building deep piers at intervals with vertical arches between them, which system has been adopted upon the Hampstead Junction and the Metropolitan Railways.

Another point requiring great attention is drainage. Earth saturated with water not only being heavier, but its natural slope being greatly flattened, its action approximates to that of a dense column of fluid. On the Euston incline of the North-Western Railway the sides of a cutting through the London clay are supported by retaining walls about 25 feet high, having a curved batter; the wall upon one side bulged considerably, in consequence of the accumulation of water behind it; the other one stood firm, the inclination of the strata acting as a natural drain. The failing wall was operated upon by boring through it and inserting drain-pipes, reaching 10 feet into the clay, which had the desired effect of letting off the water and preventing any further bulging. To make all sure, cast iron struts were thrown across from one wall to the other. Iron struts are used with great advantage on the North London Railway, and also on the Metropolitan Railway. In the latter case the walls are constructed on the principle of deep piers of brickwork at intervals of 11 feet, having vertical brick arches turned between them backed with concrete. They are carried up straight to a height of 15 feet above the rails, where the struts are placed; above this point the face has a batter of 1 in 8, the back being still vertical. The struts are made in two lengths, bolted together in the centre, and stayed with T-irons, which run longitudinally from one to the other. The feet of the piers are retained in position by brick inverts, backed with concrete.

The material employed in retaining walls must necessarily depend upon local consideration, the necessary qualifications being weight and resistance to crushing. Where stone is very abundant dry walls may be used, as is the case in a wall at Rowsley, sustaining an embankment of the Midland Railway extension to Buxton, about 25 ft. high. There being a quarry in the immediate neighbourhood, it was built dry, of sandstone grit, 11 feet thick at the bottom, 5 ft. 6 in. at the top, and with a batter of 1 in 4. Where mortar or cement is used the work must not be exposed to great pressure until it is well set. In the late extension of the Surrey Docks, owing to the sudden lowering of the water, portions of one of the walls (although 20 ft. thick in brick and concrete) bulged to such an extent as to necessitate reconstruction.

Concrete, from its cheapness and monolithic character, is a first-rate material for retaining walls; but, as it disintegrates upon exposure to the weather, it should be protected with a facing of brick or stone (good care being taken to insure a perfect bond), as in the extension of the London Docks, at Shadwell, or by iron piling and plates, as in the Brunswick Wharf, at Blackwall. Mr. Mallet's buckled plates are well adapted for this purpose.

THE LEONINE CITY, VATICAN.*

ROME may be considered as three distinct cities, each enclosed by its own walls of as many distinct ages; the largest of these, including the great bulk of the population, occupies what was in olden time the Campus Martius, and the Seven Hills; its walls, beginning at the Tiber, near the Flaminian gate, and ending again with the river below the Porta Ostiensis, date from the period of the division of the empire between Arcadius and Honorius, towards the close of the fourth century. I remember some years ago to have read a paper on the walls and gates of this seven-hilled city, and I have no intention now to recur to anything on that side of the Tiber. Let us call this *Urbs Roma*, or "the city."

The next portion, the Trastevere, is the Southwark of the metropolis. The walls of Honorius originally enclosed little more than the space covered by the Arx Janiculensis. They are now partly demolished and partly in ruins, being rendered useless by the modern enclosure of Urban VIII., A.D. 1630. Those Barberini walls begin near the Porta S. Spirito, and run up to the long ridge of the Janiculum, enclosing the extensive villas Lanti and Corsini, culminating at the Porta S. Pancrazio, and descending again to the Porta Portese. They very well parried the siege of Rome by the French army in 1848, and are now prepared for another in case of necessity; but neither do I intend to speak of the Transiberine city which is defended by the walls of Pope Urban VIII. But there is yet a third city which has its own walls and gates, and claims a history of its own, belongs especially to the Popes, monopolises the Vatican Mount, contains the great temple of Christendom and the palace of the sovereign pontiff, and, though not more than three miles in circuit, may yet be destined to become an empire of itself. This is the city to which now all eyes are turned, and on which the eyes of Victor Emmanuel are fixed. I propose to offer you a history and description of this papal or Vatican City.

The appellation of Janiculum may be applied to the whole range of hills extending from the Montorio to the Monte Mario, inclusive; but the "Vaticani Loci" do not properly reach beyond the vineyard of S. Oafrizio; the heights which rise behind the basilica of St. Peter and above the pontifical palace form the "Collis Vaticanus." In the days of Imperial Rome, this hill was covered with vineyards, producing a very bad wine, which they called Vappa. If etymologists may be trusted, it would seem that the spirit-rappers and table-turners held their happy mediums here, for both Aulus Gilleus and Sextus Pompeius combine to persuade us that the hill derived its name from *Vates* or *Vaticinia*, which just means the fortune-tellers and necromancers of ancient days, whose progeny will never die out as long as credulity and ignorance survive to feed them. The hill of prophecy, however, was accounted the most unhealthy district beyond the Tiber, where, as Tacitus tells us, the mortality was the greatest. The tradition that St. Peter was both crucified and buried in the Vatican, invested this once sickly region with a sanctity which we need not seek to disparage. As early as the age of Constantine, a large temple in the form of a basilica was erected where Anaclethus, Bishop of Rome, had constructed his oratory over the traditional sepulchre of St. Peter, A.D. 306.

But this basilica stood alone, and was not enclosed, nor any part of the Vatican hill, until the year 848; and I am now to tell you how this most magnificent suburb of Rome first became a city. After the dominion of the Goths and the ravages of the Lombards had ceased to keep Rome in terror, a new danger arose in an unexpected quarter. The Saracens, who had established themselves in Sicily, infested the coasts of Italy, and, ascending the Tiber, plundered the basilicas of St. Paul and St. Peter, which lay open and exposed to their depredations. Leo III. began, in his pontificate, to build walls about St. Peter's, but it remained for the magnanimous Leo IV. to effectually fortify Rome against the incursions of the infidels. About the year 731, we find something like a republic established under the influence of the Bishop of Rome. It was entitled the Roman Duchy. France, in the persons of Charles Martel and Pepin successively, saved Rome, and established the Popes Stephen II. and Gregory III. in their temporal power; and from that time the Popes began to act for themselves as sovereigns, until they were overpowered by the successors of Charlemagne. The first great and independent work of a secular kind executed by papal power was the city I am about to describe, and which the Pepin of the present day still defends, with all it contains, against the Lintprands and Garibaldis of the nineteenth century. In the year 848, then, Leo IV. resolved to restore the walls of Rome, especially on the right bank of the Tiber. He rebuilt fifteen of the ruined towers, and that the work might be done speedily he himself visited the walls sometimes on horseback, sometimes on foot, and after putting the old walls in a proper state of defence, turned his attention to fortifying the Vatican Basilica. The revenues of the Duchy of Rome were not sufficient. He applied to the Emperor Lotharius for help, and his majesty responded, not by sending him an army to take care of him, but ordering many pounds of silver to be paid to the enterprising pontiff. Not knowing how soon the Saracens might renew their destructive invasions, he pushed on his works; sent for labourers from every city, farm, and monastery within the Roman duchy, and in four years the walls were complete, and this was very properly called the Leonine City, a name which was preserved until the sixteenth century, and is still used to designate the city of the Pope. I will not stop to describe the ceremonies with which the walls and bulwarks of this new city were inaugurated. Bishops and priests, and all orders of the clergy, with bare feet, and their heads sprinkled with ashes, made the circuit of the walls, singing litanies, psalms and hymns, and canticles, while the cardinal bishops sprinkled the walls with holy water. Anastasius, who lived near that time, has preserved a record of the solemnities, and has told us of three gates. One was called S. Peregrino, because it faced the church of that name; the other towards the Fort S. Angelo, was called Posterula, or Little Gate S. Angelo; the third was also a posterula, called Saxonum. The ceremony of inauguration ended in a liberal distribution to the Romans and strangers who were present on the great occasion. This passage of Anastasius is valuable as furnishing an example of the ceremonies which were observed in the dedication of cities in the ninth century. Now, of those original walls dedicated in the year 852-3, two sides of the quadrilateral figure remain almost entire, and with the aid of Bufalino's plan of Rome, published in 1551, we can see what the Leonine City was before it came into the hands of Sangallo, under Pope Pius IV. The first side, one of the long ones, is almost entire, except where it is broken by the Pontifical palace; the portion of it which runs from the Fort S. Angelo to the

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* Read by the Rev. R. Burgess, D.D., before the Institute of British Architects, on the 31st ult.

palace, was transformed by Alexander VI. (Borgia), into a corridor of communication between the Vatican and the Castle. Here we place the first angular points of the Leonine City. Resuming the line of wall after its interruption by the invasion of the Vatican staircases and corridors, it runs up to the summit of the hill, and terminates in the round picturesque tower, called the Torre dei Venti, which is now enclosed within the enlarged circuit of Pius IV., which we will soon describe. The whole length of this first side is 916 geometrical paces. From the tower the walls turn at a right angle, and continue in a straight line until they are joined by the modern walls of the Porta Pertusa, where another round tower, not so conspicuous as the former, rises, and indicates the third angle. This western side of the quadrilateral is only 1,000 feet in length, equal to 250 geometrical paces. The third side, nearly parallel with the first, is now, in a great measure, thrown down, but there remain vestiges of it which may be traced for about 250 feet from the Porta Pertusa; and again at the Porta Cavalleggeri, where the walls coincide, and, in fact, form part of the present circuit. The construction called Saracenic is immediately recognised as being similar to all the rest of these Leonine walls. The Saracens impressed their hated name upon a kind of masonry which really existed long before these fierce warriors were heard of. Specimens now exist in Hadrian's Villa, near Tivoli; it consists of small parallelopipedons of stone. In the Leonine walls the stone is granular, and was no doubt taken from some of the quarries in the neighbourhood. Another specimen of this *opus saracenicum* is to be found near S. Sabina, on the Aventine Mount, the work of Pope Onorius III., in the thirteenth century. This is a considerable improvement upon the *opus mixtum* of which I exhibit two specimens; the one is taken from the interior of a sepulchre on the Via Nomentana, near the bridge over the Arrio, the other from the Circus on the Via Appia, to which I hardly venture to give a name lest some disputatious antiquary may rise up and contend for the traditional name of Caracalla. We now pursue our wall, rendered invisible by more modern works, until we come to the Tiber, behind the church of S. Spirito, and at the bridge now destroyed to its foundations, commonly called the "Pons Triumphalis," but which is marked in Bufalino as "Pons Vaticanus;" and if ever it should be rebuilt for the mutual convenience of the King of Italy and the Pope to confer together on secular matters I hope the name "Pons Vaticanus" will prevail: and no triumph for either King or Pontiff. The length of this third side measures 4,000 feet, or 1,000 geometrical paces, and is, therefore, longer than its parallel by 334. Here, however, must be found the third angle of the city of 852, and the fourth side, which completes the figure, measures, like its parallel, 1,000 feet. The result of these measurements will give to the first Papal city a circuit of nearly two miles, and within this space nearly 105 popes in succession were content to live before Pius III. began to think of enlarging the tent to make more room for St. Peter's shrine, and for the comfort and splendour of his successors.

The Leonine City had originally, like the City of Romulus, three gates; and if I should attempt to fix their several positions, and insist upon names, it would be as weary a chase as it has been after the gates of the original imperial city. It is remarkable how antiquaries and topographers get puzzled about the entrances into old cities. What battles have been fought over the gates of Servius Tullius! Who can reconcile the walls of Honorius with the walls of Aurelian? The common-sense solution of the question seems to be this, that when the number of inhabitants increased there wanted more accommodation for going out and coming in. On the return of the Popes from Avignon the Leonine City received continual accessions of inhabitants, they settled in the part nearest the river, and beyond the ditches of the fort; the three old gates were insufficient, and one of them, at least, inconvenient. More were added with new names until the old nomenclature, which seems to have little meaning, was swamped; it cannot be of much consequence to investigate this dry subject which no ingenuity can make moist, but by reference to Bufalino's plan of Rome, we can with comfort see all the gates as they then existed, that is before the Papal City assumed the outlines it has now preserved since the days of Pope Pius IV., 1562, at that period when Pope Paul III., (Farnese), had done his part, there were six gates and two posterns in use, and all that part of the city which lay between the Forts Angelo and the Piazza S. Pietro was thickly inhabited; but it still remained as a separate city. The Porta S. Spirito, which led out into the Lungara, was a full mile distant from the P. Settimiana in the walls of Aurelian, and all that lay between was unenclosed, whatever alterations or additions were made by the popes, from Alexander VI. (Borgia), to Clement VII. (Medici), they were all confined to the old Leonine City, until at length Paul III. commenced and Pius IV. completed the present walls and bastions, and Sixtus V., 1588, erected the whole into a 14th Ward or Rione of Rome, called until this day the Borgo.

The Leonine City, from the very strength of its bulwarks, seems to have attracted the besiegers. Only forty-four years after their erection Arnolfus, Emperor of Germany, came against the city, and took it by assault. Pope Formosus was obliged to comply with the Emperor's demand, which was that he would crown him as Charlemagne had been crowned nearly a century before, and, having obtained that blessing, which other emperors of the present day would like to have, Arnolfus returned home after a residence of fifteen days in Rome. A second capture of the city took place in 1063, effected by a nocturnal assault of the Anti-Pope Cadolo. Henry IV. and the ferocious Robert Guiscard, in 1084, did much damage to the Leonine City. Frederick Barbarossa did not improve it. In 1157 the Roman Senate found it necessary to make a general reparation, which lasted until Pope Nicolas V., 1452; but the last and most disastrous attack upon this ill-fated city was that of the Constable Bourbon, in 1527. The Colonnas, with the aid of the Viceroy of Naples, got possession of the city on the 22nd of September, 1526, and sacked the palace and Vatican Basilica, and a considerable portion of the Borgo, as fiercely as either Vandal, Goth, or Saracen. This war was caused by Pope Clement VII. having allied himself with the French against Charles V. The Duke of Bourbon was the *condottiero* of the armies of that emperor. Having marched against Rome, he assaulted the Leonine City on the 6th of May, 1527, and, in attempting to scale the wall near the Porta S. Spirito, he was killed by a ball from an arquebus, on the spot; the troops turned towards the main city, passing the Ponte Xysto; they plundered the houses of the inhabitants, putting to death several thousands of them, and committing the most unheard-of atrocities. The booty was said to amount to the value of six million pieces of gold. This was the most calamitous event that ever happened to Rome. Its horrors are described by Guicciardini and others, and the details of the assault upon the Leonine City acquire additional interest from the quaint but lively description of Benvenuto Cellini. He was an eye-witness of the siege, and it is even said that the ball which struck the Bourbon

was shot from the hand-gun of Benvenuto Cellini. He ended by believing the story. This was the last siege and sack of Rome until 1848, when the proceedings were milder, and the defenders properly killed, according to modern improvements; and it is not a little remarkable that those two calamities, separated from each other by more than 300 years, should both have arisen from the French assisting the Pope; but there is yet a Bourbon in Rome to renew the sorrows of 1527.

When Sir Walter Scott was in Rome, a little time before his death, it was observed that he took little interest in the ruins of ancient Rome, but was delighted with his visit to the Bracciano Castle; but that which most excited his curiosity was to find out the spot where the Duke of Bourbon was killed in scaling the walls. I believe they took him altogether to a wrong place, and, instead of showing him the Porta S. Spirito, led him to the corridor of Alexander Borgia, near the fort S. Angelo.

We are now prepared to contemplate an extension of the Leonine City, which, properly speaking, should cease now to be called by that name, because all that remains of those old Saracenic walls is found within the subsequent works of Sangallo, and, having lost their original use, are now become the dusky but picturesque ornaments of the Papal gardens.

Paul III. was pope from 1534 to 1549. He resolved to surround the Leonine City and the Vatican with new walls, and he committed the great work to Antonio da Sangallo; he commenced the fortifications on the side of the Porta S. Spirito, but a dispute having arisen between the engineer and the architect, Michel Angelo, the work was interrupted, and was not completed until the reign of Pius IV.; indeed, the Porta S. Spirito still remains unfinished, *in memoriam*, as if it was meant to immortalise the proverb—"Every man to his trade." Vasari, who was, of course, on the side of his master, Buonarroti, in the quarrel, has narrated all the circumstances in his "Life of Michel Angelo." (Volume XIV. of his works.)

"Pope Paul," he says, "had made a beginning to fortify Borgo, and he brought together many signori to meet Antonio da Sangallo, and desired Michel Angelo also to be present, for he was aware that the fortifications made about the Mount St. Miniato, at Florence, had been planned by Michel Angelo. After much disputation he was asked to give his views, and although he was of a contrary opinion to Sangallo and several others, he frankly told them all that he thought. Upon this Sangallo said to him that his business was sculpture and painting, not fortification. Michel Angelo replied that he knew very little of the art of sculpture and painting, but as to fortification he had made it a study for a long time, and that, added to his practical experience, led him to think he knew more about it than Sangallo and all his friends put together. At the same time he pointed out, in presence of the whole meeting, several mistakes in Sangallo's plans; and the alteration got to such a height that the Pope was obliged to impose silence upon them both. And not long after, Michel Angelo brought his designs for the fortifications of the whole Borgo, and took care of all that was already planned and done after, and this was the reason why the bastion and great gate of S. Spirito, which was near the commencement, remained unfinished. As far as we can learn from this, it would appear that the dispute was as to the merit of the invention; the science of modern fortification was then in its infancy; none had been created since the invention of gunpowder; the upright towers connected by curtain walls were no longer able to resist the new engines of war; and although the quarrel between the two great geniuses of the day had suspended the works in the Vatican, Pope Paul III. recompensed Sangallo by employing him to raise the splendid Bastion which now exists between the Porto Appia and the Ostiensis, to which Sangallo gave his name. Engineers of course repair to study this first specimen of modern fortifications, and not the less all that portion of the city walls which defend the south part of the Aventine Mount, and secure the gate of St. Paul. The bastion of S. Gallo is worth a sketch. Sangallo died in 1546, leaving Michel Angelo a clear coast, who lived until 1563. We may infer from subsequent events, that these two first-rate men were reconciled before the final separation; they were both employed about the Farnese Palace. Nevertheless the fortifications round the Leonine City stood still for near a quarter of a century, and Sangallo had no more to do with them. Pius IV. took up the suspended work of his predecessor, impelled thereto by the incursions of the Turks, who had at that time begun to ravage some parts of Europe, and threatened destruction to Rome itself. On the 8th of May, 1561, the Pope laid the first stone of his new walls, and adopted the plans of Michel Angelo, now near the end of his career. It may not be uninteresting if we pause here for a few moments to look at the modern distinctions of kindred professions,—distinctions from which no doubt the arts and sciences have gained greatly. It is evident that in the revival of the fine arts of the Cinque Cento, great masters often invaded the provinces of each other. Raffaele is put down among the architects, so is Peruzzi of Siena; several others figure in the lists of both painters and sculptors. Michel Angelo, as we have seen, planned the fortifications of the city of Pius IV., and Sangallo designed the Palazzo Farnese, but neither of them carried their own plans into execution. Neither of them was the right man in the right place; but there can be little doubt that if the two great rivals in civil engineering (before the art was well understood both of them equally engaged by Paul III., as architects), had lived at this day, I have no doubt Michel Angelo would have had the Great Exhibition, and Sangallo would have got Portsmouth; but, as I have said, professional distinctions were not then very much defined, and we must admit that Michel Angelo was a striking instance of an Engineer and an Architect in one. But this anomaly in professional services comes down much later than you imagine. Lord Macaulay tells us that as late as 1685 most of the ships that were afloat were commanded by men who had not been bred to the sea. No state, he says, ancient or modern, had before that time made a complete separation between the naval and military services. Pompey and Agrippa fought battles by sea as well as by land. At Flodden the right wing of the victorious army was led by the Admiral of England; and even after the Restoration the same system was followed. Great fleets were entrusted to Rupert, a daring cavalry officer; and when General Monk once wished his ship to change her course, he moved the mirth of the crew by calling out, "Wheel to the left." There were naturally some professional blunders when men undertook too much. These were days in which neither the art of war nor the art of navigation made it so necessary to draw a line between two professions which had hitherto been confounded; but now one, at once and for all, is enough to occupy a single mind. The arts of peace as well as the arts of war now claim an undivided attention for their respective departments, and the only way to succeed in these days is to stick to one's text. There may be a comprehensive genius who may rear with equal success a Palladian palace or a Russian

fort; but it happens to few, and, as a general rule, it is safe to be warned by the venerable axiom, *Ne sutor ultra crepidam*.

Paul IV. died in 1556—that is, five years after resuming the left-off walls of his predecessors; but the work was not completed until Pius V. He employed in the finishing a number of Turkish captives taken at the battle of Lepanto, 1571, but the circuit never went beyond the gate of the S. Spirito. As it stands now, firm and unshaken, it is three miles round. The gate near the Fort S. Angelo is closed. The Porta Angelica gives access to the Borgo from the roots of Monte Mario and the north. The Porta Pertusa—called also the Viridaria, because it led into the papal gardens—is now shut up. The Porta Fabrica, so called because it was convenient for approaching on the southern side of the Basilica, and the Cavalleggeri, because it was near the quarters of the Pope's body-guard. Such is the present circuit of that magnificent city, marked out with admirable prescience just three centuries ago to be the seat of an empire which none can envy, and an abode of splendour which all must admire. The city I have described is complete in itself; it has thirteen principal streets, besides lanes and alleys, and open spaces; it contains twenty churches or chapels, independent of sisterhoods, fraternities, and charitable institutions; it has eleven palaces, ample and sufficient for foreign ambassadors. It contains the never-ending compartments of the great museum, the Pontifical Palace and gardens—

"The dome, the vast and wondrous dome,
To which Diana's Temple was a cell."

It may still have its Girandola and two fountains, with the courts and offices of the Holy Inquisition, and the magnificent colonnade, in the centre of which stands the monolith we want to imitate; and there is a peaceable and devoted population of more than 3,000 souls loving to dwell under the shadow of the Loggia Vaticana for an occasional benediction. Who, after having known the vicissitudes of all the Puses up to the eighth, would not desire to be the ninth. Pius the Third, Fourth, and Fifth consumed their days in building walls and fortifications. Brasci Pius VI. was driven, for protection, to Vienna; Pius VII. was a captive in the hands of the first Napoleon; Pius VIII. was in Paradise in two years; but the last of the name has had the offer of a city and vast revenues, and no one to interfere with the canonizations of twenty-five Japanese martyrs; but these matters do not belong to us, who do not come here for building walls against which to run our hands, but to draw a line of ancient fortifications which will secure all contending parties within their own limits.

There stands within this city, of which we have now given the history and description, an object which, like others of its kind, has recently acquired additional interest; of course, I mean the obelisk in front of St. Peter's. As we are, by favour of the Institute and its generous President, to have a reprint of a paper, and discussion thereupon, with regard to obelisks at Rome, it would be unpardonable in me if I were now to inflict upon you a dissertation by way of appendix to my *Leone City*. But a few words, perhaps, will be allowed me in collecting all the information we can as to the mode of erecting those monoliths which are now standing. Perhaps the Vatican obelisk affords most for our purpose. First, it is the largest mass of granite at Rome, except one, that of the Lateran; its weight was calculated at 331 tons. The length of the shaft is 80 feet 9 inches, the width at the base 8 feet 4 inches, contracting to 5 feet 8 inches at the pyramidion; if the basement and ornament at the top be included, the entire height is 127 feet 6 inches, which, I presume, will be about our affair. In the next place, it is no a genuine Egyptian obelisk; it has no hieroglyphics upon it; and we are not aware of the existence of any unsculptured obelisk ever erected in Egypt. The reading of Pliny is not received by critics; the text is manifestly corrupt, and there can be little doubt but this monolith was cut by order of Caligula, in the quarries of Syene, and dedicated to the memory of Augustus, but actually set up on the Spina of the Circus of Nero. From that destination it was never moved until Sextus V. had it conveyed to where it now stands; four months were consumed in moving it 300 yards; you all know how and by whom the great work was effected. We shall want a Fontana and a vast quantity of ropes, when we have found the granite mass. We cannot hope to reach the large grained red quarries of Syene, in upper Egypt. You are aware that Syenite is distinguished from common granite by having hornblende in the place of mica; it will be impossible, perhaps, to obtain the warm red granite which we generally associate with the idea of an obelisk, but if any of our native quarries can produce a fair specimen of the obelisk material, and any of our native geniuses set it up in its place as a memorial to all generations, we shall be proud of the achievement, and successive generations will learn in that stone that "the memory of the just is blessed."

STONE-CUTTING MACHINE.—The *Arbroath Guide* describes a machine, which is to put an end to masons' strikes and nine hours' movements:—There is now in process of completion in the establishment of the Messrs. Munro, founders and engineers, Arbroath, a machine which, it is believed, will entirely revolutionise the mason work of the present day. It is to perform with speed, accuracy, and regularity of finish nearly the whole of the mason work—hewing, dressing, &c.—now executed by hand. It will dress and polish stones, and do almost everything appertaining to plain masonry, "giving to ashlar work an ornamentation quite unique." This machine is an amplification and completion of the inventor's idea that seven years ago found expression in the ridge-dressing machine, which was then patented; but only two of which were made, as Mr. Hunter saw and has been working out this new and greater scheme.

STAINED GLASS.—ST. STEPHEN'S, WALDBROOK.—Four of the larger and fourteen small windows in the church have recently been filled with stained glass by Mr. Gibbs. The four large windows consist of two at the west end, on each side of the organ loft and entrance, and two on each side of the communion-table. The smaller ones fill up the oval windows. The subjects of the new windows are illustrative of the chief acts and sayings of the Saviour. The large windows have the Nativity, the Baptism, the Crucifixion, and the Ascension, and contain figures the size of life. The smaller pictures in the ovals represent, on the south wall, the Miracles, and on the north the Parables, and include Turning the Water into Wine at the Marriage-feast, the Raising of Jairus's Daughter, the Resurrection of Lazarus, the Miracle of the Loaves and Fishes, the Healing the Sick, Walking on the Water, the Prodigal Son, the Pharisee and the Publican, and the Good Shepherd.

ROOD-LOFT, ST. DAVID'S CATHEDRAL.

THE Cathedral of St. David's, though not equal in size to many of the others, and comparatively little known, is equal to most of them in interest, though, perhaps, of a melancholy kind.

Few scenes can be more solemnly interesting than this on an autumnal evening, when the sun is just setting, and the traveller, having passed through the humble village, dignified with the name of a "city," finds himself on the brow of a rugged hill, and sees suddenly close below him a mass of buildings such as he has never seen around any other cathedral, and of which his imagination never dreamt, but all of which appear to be struck by the hand of time, and to be fast mouldering into decay.

In the centre rises the massive tower of the cathedral, but with the eastern portion of the building unroofed, and its aisles and walls open to the wind and rain. On the left, and surrounding the whole precincts, is the wall of the close, with its solid gateway still entire. On the right is another building, entirely in ruins. This is the College of St. Mary; and still further is seen what must once have been a magnificent pile, the Episcopal Palace, but now, like all the rest, entirely in ruins. Beyond all this are the rugged and sterile hills stretching towards St. David's Head, and over all the ocean itself.

It is melancholy to look on so much ruin, and one naturally feels inclined to inquire into the history of the rise and fall of edifices reared at so much cost on so desolate a spot, and standing, as they do, on the very confines of cultivation.

We have not space here to enter into this history, and we only give an illustration of a small portion of the building as a specimen of the architectural interest which attaches to it.

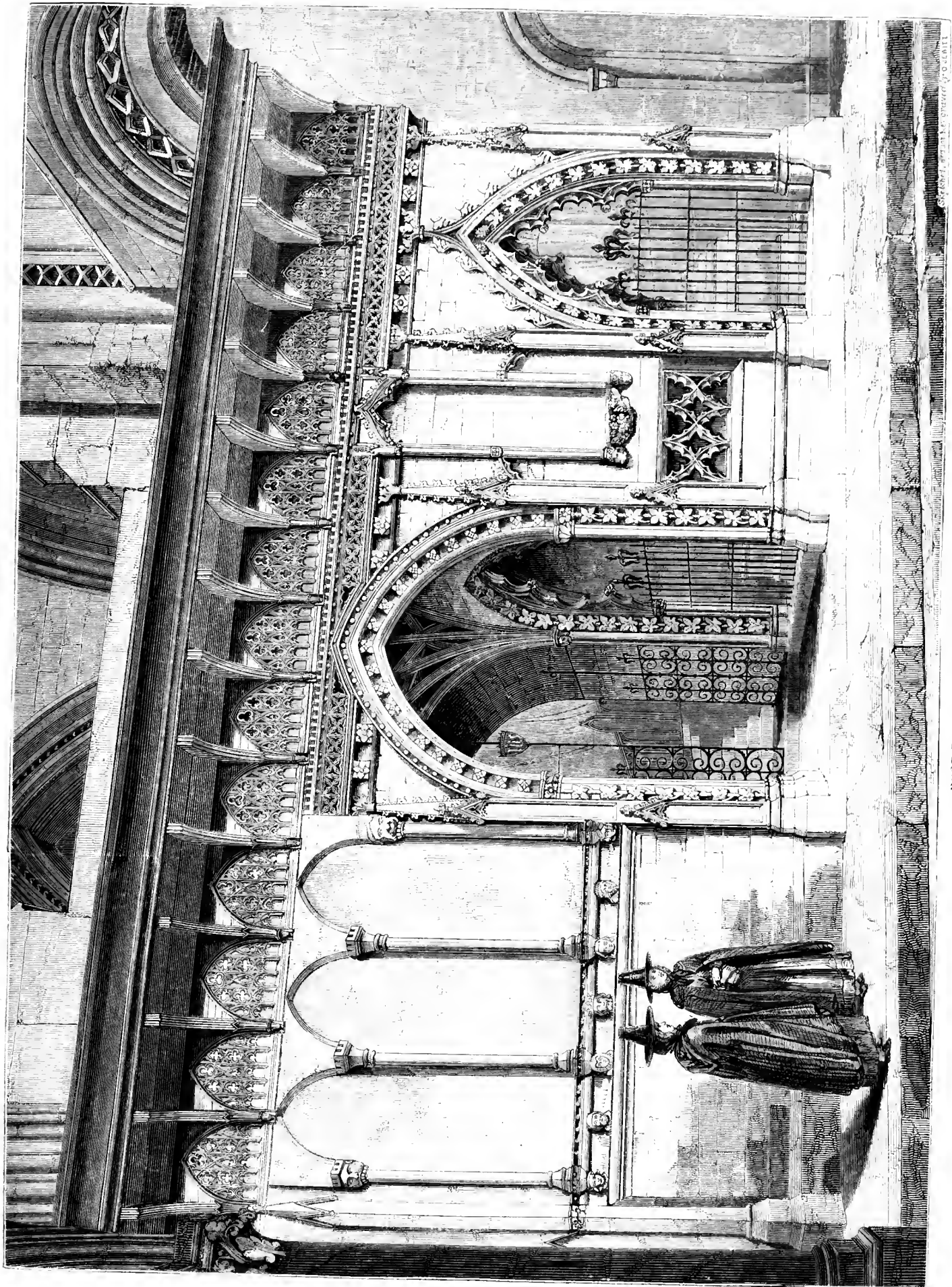
The rood-loft, which, as usual, divides the nave from the choir, is of two different dates, the principal portion—i.e., the central archway and the southern wing—being the work of Bishop Gower, between 1328 and 1347. This is very rich and beautiful decorated work. The *skeleton* tracery under the central arch is very remarkable. The tomb of the bishop stands within the southern arches. The northern portion is of much plainer character, and of earlier date, and is, no doubt, a part of the original screen as it stood before Bishop Gower's alterations.

The costume of the heads in the cornice under the arcade is of thirteenth-century date. The screen is surmounted by a cornice of oak, which was added in 1847; but the panels, which are filled with Perpendicular tracery, are the remains of older work, and the springings for fan tracery between them show that it must have originally been far different to what it now is. It is, however, suggested that this woodwork may have been brought from elsewhere.

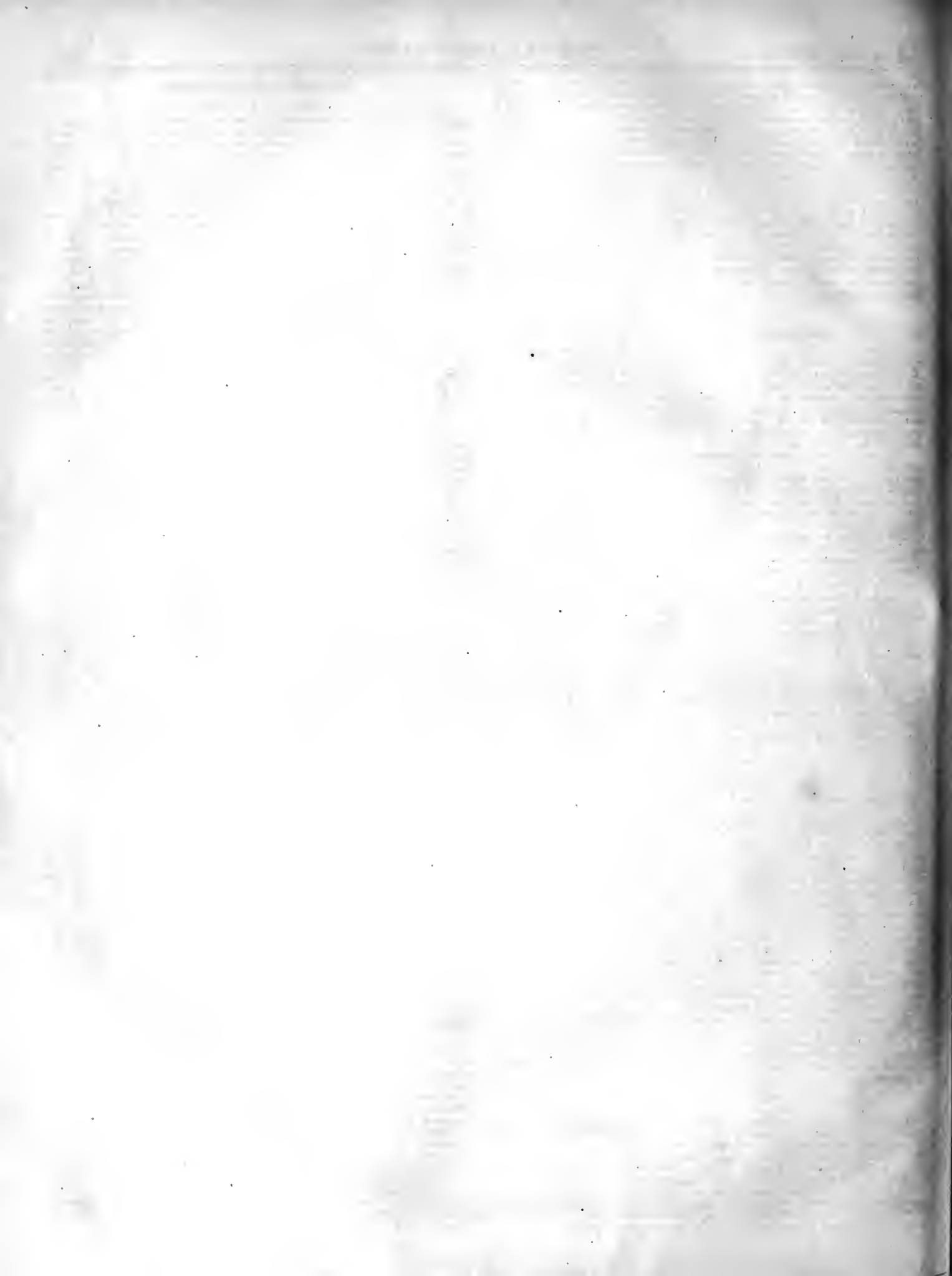
A very careful and minute description of the rood-loft will be found in Messrs. Jones and Freeman's "History of St. David's," one of the most complete and valuable histories of a single cathedral which has ever been published.

PROGRESS OF THE METROPOLITAN MAIN DRAINAGE WORKS.

AT the ordinary meeting of the Metropolitan Board of Works, held at the offices, Spring-gardens, on Friday last, Mr. BAZALGETTE, the Engineer-in-Chief of the Board, reported that the continued and heavy rains which have occurred during the past month have been very unfavourable for the execution of the Main Drainage Works. The progress made by Mr. Furness upon the Northern Outfall Contract has, notwithstanding, been considerable, about £22,000 of work having been executed under this contract since the last monthly report made to the Board. The iron girders are in course of construction over the river Lea at Bow and Barking, and the North Woolwich Railways and the plates are being riveted for some of the other bridges. The cutting through the Eastern Counties Railway embankment, the difficulty of which work is increased by the almost continuous passing of the heavy traffic over it, progresses slowly but safely, and the two outside permanent brick piers are now carried up to the requisite height for the support of the rails, which now rest upon temporary timbers. The contractor's railway by the side of the permanent work has been extended on from Plaistow to the Stratford-road, and the concrete embankment has been thereby pushed forward between those points. The brickwork in the intercepting sewers and the foundation piers and arches through the marshes and peat subsoil, have made considerable progress, and the total value of the work now executed is about £232,000. The general character and management of this work is very creditable. The Northern High-level Sewer, which has been some time finished and in operation, continues to perform its duty satisfactorily, and the engineer has recently settled the accounts for extras and deductions on this work. Messrs. Brassey and Co. have now completed about 25,300 feet of the Middle-level Sewer, varying in size from 4 feet by 6 feet to 12 feet by 9 feet in diameter. They have also completed about half the sewer under the Regent's Canal, and, from the precautions adopted and the care taken in the execution of the work, there is every reason to expect that they will complete this difficult portion of their contract without any further accident. They have, moreover, made good progress with the tunnel under Oxford-street, and are now preparing to remove their shafts and observatories so as to leave the thoroughfare free from obstruction during the summer months. The total value of the work done by them is about £116,000. The weirs, overflows, and connections of the junction of the Ranelagh Storm Overflow with the Middle Level Sewer in the Uxbridge-road, for the reasons stated in the engineer's last report, progresses slowly, but the work is of a very substantial character, and amounts to about £28,300 in value. All obstructions have been removed from Hyde-park and Kensington-gardens, and the ground has been levelled and grass sown. On the Southern High-level Sewer, Messrs. Lee and Bowles have constructed about 8½ miles of sewer, at an estimated cost of £154,000, but this contract has suffered considerably from the effects of the heavy rains, both by floods in the Broadway, Deptford, and by the falling in of the bricks of the trenches, at Dulwich, and at the junction of the south branch with the main line, but it is probable the



ROOD-LOFT, ST. DAVID'S CATHEDRAL.



experience thus gained will lead to the adoption by the contractors of precautions which may for the future prevent the repetition of similar disasters. On the Southern High-level Sewer Extension, Mr. Pearson has constructed 1,035 feet of sewer, at an estimated cost of £1,531. Mr. Webster will shortly complete the Southern Outfall Sewer, and as he had finished all the difficult portions of the work, there was little to be reported respecting it beyond the fact that it had been executed in a manner which has given general satisfaction in the localities through which it passes, and reflects credit upon the contractor. The total value of the work executed is about £284,000. Messrs. Aird and Soa have made fair progress with the Deptford Pumping station, and the engine-house, and hoists have been raised from 3 to 4 feet above Trinity high-water mark; the cross sewers and penstock chamber are completed, and the penstock gratings fixed. About 4,000 feet of iron pipe connections under the creek are laid on 566 feet of double line of the Low-level Sewer, constructed each 7 feet in diameter. These works, together with the river wall, coal sheds, and other works in connection therewith, amount to about £68,500 in value. The progress of the Southwark new street is now more satisfactory, some of the property which formerly obstructed the works having been removed, and the paving near to the High-street is progressing.

METROPOLITAN BOARD OF WORKS.

Improvements.—The Board at its last meeting, held on Friday, received a report from the Works and Improvements Committee, recommending that the Board do contribute one-third of the cost of effecting a public improvement in the Grauge, Bermondsey, to be carried out by the Vestry of Bermondsey, by the widening of Cow-alley, as shown upon the plan produced to the Committee, estimated at £265 11s. 4d., exclusive of professional charges; such contribution not to exceed £88 10s. 5d., and that such amount be paid to the Vestry of Bermondsey, on a certificate from the architect of this Board of the completion of the work.—Agreed to.

Also recommending that the Board do contribute one-half of the cost of effecting a public improvement in Purim-place, Cambridge-road, to be carried out by the Vestry of Bethnal-green, as shown on the plan produced to the Committee, estimated at £270, exclusive of professional charges; such contribution not to exceed £135, and that such amount be paid to the Vestry of Bethnal-green, on a certificate from the architect of this Board of the completion of the work.—Agreed to.

The Building Act and General Purposes Committee recommended that the application of Messrs. Morris and Soa, for the consent of the Board to the erection of an addition to an existing closed porch at No. 6, Manor-terrace, East India-road, Poplar, as shown upon the plan accompanying the application, be not granted.—Agreed to.

Fireproof Construction of Stairs.—Amongst the items in the agenda paper of the superintending architect was the following:—"St. James's Parish.—Her Majesty's Theatre.—Reference by Mr. Lee, architect, and Mr. Kerr, district surveyor, as to fireproof construction of stairs and accesses to concert-room."—This case came before the Board by way of reference. It appeared that the proprietor of Her Majesty's Theatre was desirous of making an additional (wooden) staircase to the concert rooms, but the district surveyor required that it should be made of fireproof materials. The superintending architect agreed with the district surveyor. Mr. Lee said that if fireproof construction of the proposed staircase was insisted upon, it would probably not be made at all, owing to difficulties in the way and the additional expense involved. The Board, however, adopted the report of the superintending architect, that the staircase, if made, must be made of fireproof materials.

BENNETT'S SOLUTION FOR CEMENTS.

WE have received a specimen of Portland cement treated with Bennett's "indurating and quickening solution for Portland and other cements." Without some experience of its use it is not possible to form a just idea of its value, but if what is said of it be true, it cannot fail to become largely used.

The inventor says that it produces effects upon cements generally, and Portland cement in particular, most remarkable and invaluable in its results, and that the objection that after the lapse of a certain period from the time of manufacture cement becomes unfit for use, or "dead," as it is termed, is overcome by the patented solution, which restores to the cement its virtue and to the owner its value. This solution, moreover, possesses qualities for hardening the cement when set, and bringing out castings with sharper outline than is effected by the ordinary methods. But of all cements to which it may be applied, to Portland it appears to render the most important aid, for with this cement it entirely does away with (providing the cement be of good quality and colour) the only objection that can be urged against it, namely, the length of time it takes setting, for by mixing the solution according to the directions given, in varying proportions with the water used, the cement can be made to set in any required time at the option of the user. The patentee reckons the saving of time by the use of his invention to be not overrated at 100 per cent.

For assisting the hydraulic properties of cements this solution is said to be extremely efficacious, setting cement under water in fifteen minutes if needed.

For plastering purposes 1 quart of the solution is mixed with 40 gallons of water; for hydraulic works, 1 quart of the solution to 20 gallons of water; and for castings and artificial stone, 1 quart of the solution to 30 gallons of water is recommended.

PREVENTION OF ROTTING OF WOOD.—*Herapath's Railway Journal* prints the following:—"To prevent posts and piles from rotting, the following coating has been recommended, which is the more suitable since it is economical, impermeable to water, and nearly as hard as stone. Take 50 parts of resin, 40 of finely powdered chalk, 300 parts, or less, of fine white sharp sand, 4 parts of linseed oil, 1 part of native red oxide of copper, and 1 part of sulphuric acid. First heat the resin, chalk, sand, and oil in an iron boiler; then add the oxide, and with care the acid; stir the composition carefully, and apply the coat while it is still hot. If it be not liquid enough, add a little more oil. This coating, when it is cold and dry, forms a varnish which is as hard as stone."

HOUSE OF COMMONS.

THAMES EMBANKMENT.

SIR J. SHELLEY having moved for a return of the estimated expenditure for carrying into effect the provisions of the Thames Embankment Bill, distinguishing the cost of the filling-in and the masonry of the embankment, the gross amount of the compensation for wharfage and river frontage, the cost of each approach to the embankment, and of each of the other streets and improvements mentioned in the Bill, including compensation, and all other expenses; also the cost of the low-level sewer, the length of the embankment and of each street, together with a plan of the embankments, streets, and improvements, the hon. baronet contended that the inhabitants of the metropolis ought to have fuller details than they now possessed with regard to a scheme which was estimated to cost a million and a half of money.—Mr. Cowper said the Bill would be referred to a select committee, and the information which the hon. baronet wished for would be best ascertained from the evidence to be given before that committee.—On the motion that this Bill be read a second time on Monday, Sir J. Shelley said he had hoped the Chief Commissioner of Works would have given the House some details as to this Bill. It is proposed to tax the people of the metropolis to the extent of £1,500,000, and he thought there ought to be a good reason shown for the carrying out of the proposition. The subject had been under the consideration of a select committee which made certain recommendations that he thought worthy of consideration. But after Parliament had been prorogued there appeared a Royal Commission to inquire into the matter. That Commission advertised for plans, and fifty-eight were sent in. He (Sir J. Shelley) did not think the composition of the Commission was such as to entitle its recommendations to great weight. The plan which was suggested for adoption proposed to do away with the whole of the wharfage trade of Westminster; but the moment it approached the precincts of the city an entirely different spirit came over it. Perhaps that was owing to the influence of the Lord Mayor. But he contended that it was a most unfair proposal. The effect of the removal of the wharves would be that his constituents would have to pay 2s. to 3s. per ton more than at present for their coals. His constituents were to be asked to pay £300,000 or £400,000 for the filling up of these wharves, and then be mulcted 2s. to 3s. a ton on the price of their coals for, having done so. With reference to the plan itself, he contended that it was a very bad one. It was not one of those reported upon by the Commission, but a plan brought forward by one Royal Commissioner. It was his belief that although the Commission advertised for plans from civil engineers, yet that all the time the one now proposed was ready cut and dried in the office of the Commissioners themselves. That on the face of it was extremely suspicious. Seeing that the plan was entirely contrary to every plan which had been before them hitherto, and all of which went as far down as Queenhithe, and there communicated with Cannon-street, instead of stopping at Blackfriars, and leaving the wharfage untouched; and seeing that this plan did away with the wharfage property down to the Temple, treated with great respect the wharves of the City as far as Blackfriars, and conveniently turned there, giving the city of London a most magnificent street to which the Corporation did not contribute a farthing; considering further the Lord Mayor of the City was at the head of the Commission, he (Sir John Shelley) had a right to ask for further explanation, and to inquire how much of the £1,500,000 was to be wasted in filling up wharves and in making a fine lengthy street through the middle of the City, which street he believed to be entirely unnecessary. His constituents would gladly see the embankment made, because the main drainage scheme could never be carried out without it. The returns which he had previously asked for had been placed in his hands by the First Commissioner but only that day; and under all the circumstances he felt justified in moving, as an amendment, that the House would not proceed further with the Bill until the estimated cost of the works authorised thereby was laid on the table.—Mr. Cowper said that he had no objection to the printing of such a return. The substance of that return he could, however, state to the hon. member in a few words. The estimate for the entire work was £1,500,000—of which £500,000 was for the works of the embankment, the roadway, and the new streets—£500,000 for compensation to wharfingers and others; and the remaining £500,000 for losses arising from the construction of the new street to the Mansion House from Blackfriars-bridge. The length of the embankment would be 1 mile 17 chains and 90 links; of the short streets going into Whitehall, 1½ chains; of the street running from the embankment to opposite Somerset House, near Waterloo-bridge, 34 chains; and of the street from Blackfriars bridge to the Mansion House, 58 chains. With regard to the details of compensation, it would not be fair to the engineer who had estimated that expense to make public all his calculations upon the subject. The Bill would be treated in this respect as a private bill, and the parties interested would have a right to appear by counsel before the select committee. The House would have an opportunity in committee of the house of sifting every detail. With regard to the composition of the commission, two military engineers, Captain Galton and Sir Joshua Jebb, and one civil engineer, Mr. McLean had been selected because of their freedom from any bias, or tendency to bias, in favour of any particular plan; Captain Birstal for his intimate acquaintance with the navigation of the river, and Mr. Henry Arthur Hutt for his skill and experience in the valuation of property. It was also thought desirable to have two gentlemen on the commission to represent the metropolis. The Chairman of the Metropolitan Board had been elected as the representative of the ratepayers, and the Lord Mayor, because it was well known he was particularly well qualified to form an opinion upon the subject. He thought that any decision arrived at by such a commission was far more likely to be satisfactory than one which he (Mr. Cowper) might have recommended the Crown and Parliament to adopt. Under these circumstances he hoped the House would consent to the second reading of the Bill. It was of great importance that no unnecessary delay should take place. The second reading of the Bill did not pledge the House to any details; it would simply affirm the general principle that the produce of the coal duties was to go for the purpose of making the embankment.—Mr. Ayrton said that the object of the hon. baronet the member for Westminster was simply this, that before going into committee upon the Bill the inhabitants of the metropolis should be in possession of the nature of the scheme proposed, about which they had hitherto been kept in perfect ignorance. As now explained by the right hon. gentleman it was not a new scheme, having been proposed two-and-twenty years ago, and rejected by a very distinguished commission, comprising among others the present Duke of Newcastle, Mr. Herries, Sir Robert Inglis, the Lord Mayor, Sir James Knight, and Sir Charles Barry, who called to their assistance Sir W. Cubitt, Sir George Rennie, Sir John McNeill, and other celebrated engineers. The proposed street

to the Mansion House was also an old one, and it was condemned on the ground of the expense being greater than the utility, for it was estimated by Mr. Bunning, the city architect, to cost £1,000,000. He was anxious for the embankment of the Thames, but wished the work to be gone about with economy, judgment, and discretion.—Mr. Locke could not understand why the City part of the embankment should require viaducts, and the Westminster part not. He supposed that the scheme had been planned in the interest of the City Gas Companies; but hoped that the committee would so alter the Bill as to make the embankment the same all the way. As to the proposed street, it ought to be made by the City out of the portion of the coal-tax which it still retained, and which had already built Cannon-street; and a street from thence to Blackfriars-bridge had been begun out of the same fund.—Mr. Cox said if this were a proposition which simply proposed the embankment of the Thames, he should not offer any opposition to it; but the Bill went further, and proposed to make a street from Blackfriars-bridge to the Mansion-house, which he believed would cost a million of money. The object was to obtain a good continuous thoroughfare from east to west, and he believed that object might be better attained than in the manner proposed. Supposing they started from Charing-cross, the first impediment which was encountered was Temple-bar. But why not pull down Temple-bar, then continue the route along Fleet-street, widening one portion of Ludgate-hill, and then they had a fine opening into Cannon-street? Or they might take the through thoroughfare from Oxford-street through Holborn, pulling down Middle-row, Holborn.—The Bill was then read a second time, and referred to a select committee.

THE WELLINGTON MONUMENT.

Lord Lovaine asked the First Commissioner of Works how soon it was expected that the monument of the late Duke of Wellington, in St. Paul's Cathedral, would be finished, and whether the surplus of the sum voted for the Duke's funeral would be sufficient to defray the whole cost of the work.—Mr. Cowper said the artist to whom the commission had been given to prepare the model had received his instructions on the subject in November, 1858. Three years and a half had, therefore, elapsed since the order had been given. The model, however, was not yet completed. He was sorry that so long a delay should have occurred in the matter, but he presumed the time had not been wasted, and that the artist was preparing himself by preliminary study for the better execution of his design. He was not able to inform the House when the model would be ready, while he had no doubt that the sum voted was sufficient for the purpose for which it was intended.

WESTMINSTER PALACE.

On Thursday se'nnight, in Committee of Supply, £32,647 was proposed for the Houses of Parliament.—Sir H. Willoughby asked whether the building account was closed, and whether they must expect to find a sum of £32,000 charged every year for keeping up the building?—Mr. Cowper said the vote was for ordinary expenses, and he did not see how that sum could be materially reduced in future years.—Mr. Kendall said that there were in or about the building some 5,000 gaslights and about 200 argand lamps. Nevertheless, while the expense of the former (which was equal to 7,000 argand lamps) was only £2,500, the 200 oil lamps actually cost £2,000.—Mr. Ayrton said that four statues to sovereigns of this country had already been erected. The four selected had been Charles I., George I., George IV., and William IV. This year two new ones were to be added, and he wished to know to whom the statues were to be erected?—Mr. Cowper said the item of £6,108 for gas and oil was divided between the two. Oil was in use in some of the offices under a contract of old standing, but by the end of the present session of Parliament a new contract would be made, which he hoped would be more economical and substitute gas for oil. Last year the House voted four statues out of a chronological series of twelve. The present vote included two of these statues out of the twelve. He believed the statues to which the present vote applied were the statues of William III., and of Queen Mary.—Sir M. Peto suggested that there should be executed by one of the first artists of the day, and placed in the most prominent position, a statue of the late Prince Consort. He believed the House would gladly vote a sufficient sum in order to obtain the best work of art that could be procured. The country would like to see so fitting a tribute paid to that virtue which has so signally distinguished the present reign.—Sir M. Ridley said that the statues of Pitt, Grattan, and Burke, placed in the hall, were about as bad specimens of works of art as were ever perpetrated. There was no mind, no speech, no thought in them, and he considered that the money paid for them had been thrown away.—Sir J. Paxton inquired whether the sum of £3,000 charged for racks for public records in the Victoria Tower was a concluding vote, or whether it was to be continued.—Mr. Cowper explained that room was required for the records of the House of Lords, and two rooms out of sixty-four in the Victoria Tower had been fitted up for that purpose.

THE NELSON MONUMENT.

Admiral Walcott on Friday drew the attention of the Chief Commissioner of the Board of Works to the incomplete state in which the base of the Nelson Monument was suffered to remain, and in doing so stated that nearly four years had elapsed since the monument had been left in its present incomplete state, though the then Chancellor of the Exchequer obtained a vote of £6,000 for its completion, which had been entrusted to a sculptor, but to a highly eminent artist. There could be no doubt that foreigners visiting London during the forthcoming International Exhibition would consider the state of the monument to be a national disgrace. He regretted that a statue which was intended as a matter of respect and admiration for Lord Nelson, and one which might quicken in his successor a desire to emulate his glorious career, had not attained even its present condition without the aid and munificence of a foreign nation. England might not have buildings as splendid or galleries as rich as some continental nations, but she should show that she possessed the power and the desire to regard with reverence the memory of those who deserved well of their country. It was most discreditable to see in the grand square of this capital, in this great thoroughfare, leading to the wealth of the metropolis and the chambers of the Legislature, an incomplete memorial of one of their greatest naval heroes and admirals.—Mr. Cowper in reply greatly deplored that that monument was unfinished. The order for the execution of the lions was given in 1858 to Sir E. Landseer, a man of great genius, quite competent for the task. But genius, he supposed, was not always to be commanded, and Sir E. Landseer had not yet been able to satisfy himself as to the work of art which he was to place upon

that monument, and could not yet name any time when the lions, which were now in hand, would be completed. All he could say was that Sir E. Landseer was now very accurately studying the habits of lions, and was to be seen in the Zoological Gardens, making himself thoroughly acquainted with their attitudes. It was to be hoped that all this delay would secure our ultimately having a work of art of still greater perfection than if it had been executed as rapidly as had been expected. Sir E. Landseer was quite aware that a great monument was in a very imperfect state while the portion of the work entrusted to him remained unfinished.

CHURCH BUILDING.

Kent.—*St. Mary Cray Parish Church.*—This church, which has been closed about nine months for the purpose of undergoing a general reparation, was reopened on Thursday se'nnight by the Archbishop of Canterbury. The work includes new pewing entirely, floor raised by a bed of concrete, new tiling, new roof over nave, gallery removed and tower thrown open, two chapels restored (one seated for the congregation), organ repaired, new stonework to six windows, new vestry and porch, churchyard levelled and old tombs lowered, and a new buttress. Mr. Edwin Nash is the architect, and the works have been executed by Mr. Hollidge, of Norwood. The cost has been about £1,800.

Yorkshire.—*Darlington Parish Church.*—A meeting was held on the 28th ult., with a view to obtaining the necessary faculty for carrying out the proposed restoration of the parish church of Darlington. The General Committee reported that the total subscriptions amounted to £3,134; that they had, with the sanction of the subscribers, confirmed the appointment of Mr. G. G. Scott as architect; that the number of sittings in the church as proposed to be altered would be 1,004, whereas there are now only 966; that the operations to be immediately carried out, in regard especially to restoration, would be £1,550, to repewing, £1,700—total, £3,250; that operations which will admit of delay would cost £1,050; and that other objects estimated for by Mr. Scott, but which they did not at present contemplate proceeding with, would cost £1,000. A resolution was submitted to the meeting, sanctioning an application for a faculty, and carried.

Ireland.—The following items are taken from a recent number of the *Dublin Builder*. The foundation-stone of St. Mary's, Dargle, was laid on St. Patrick's Day. The structure will consist of a nave and chancel, terminating in a semi-circular apse; tower, with low pent-house roof and embattled parapet at west end of north aisle; north porch and sacristy. The dimensions are 136 feet 6 inches by 65 feet in the clear, and the style is the Early Pointed. Messrs. Aitken, Crosbie and D. Cotter are the contractors; and the materials will be sandstone for rubble and limestone dressings.—The works in the erection of the church of St. Agatha, Glenesk (the foundation-stone of which was laid a few months ago), are being rapidly carried on. There is a nave and chancel, with aisle (with sacristy at eastern end, and a tower and baptistry at the west end), and a south porch. The upper part of the tower terminates in an octagon. The east and west windows of chancel and nave are three-lights; the south windows of nave and north windows of aisle, two lights. Dimensions in clear, 95 feet 6 inches by 40 feet. The style is Decorated Gothic.—The foundation-stone of St. Michael's, Lixna, near Tralee, was laid in September last, and the building is gradually assuming proportion. It is in the Romanesque style, and comprises nave and chancel, with semicircular apse, and aisles with sacristy. The dimensions interiorly are 88 feet 6 inches by 50 feet. The materials used are the limestone and marbles of the district; the contractors are the Messrs. Beardwood, of Dublin.—The interior fittings and decorations of the M'Eniry Chantry, Tralee, are being carried out by Messrs. Hardman and Co., of Dublin. They consist of an altar and reredos in Caen stone, alabaster and coloured marbles richly carved, a high tomb with recumbent effigy of Dean M'Eniry vested in canonicals, screens separating the chantry from the other parts of the church, rich encaustic tile pavement of floor, a group in bas-relief, illustrating one of the most characteristic scenes of the dean's daily labours, and various coloured decorations.—The church of St. Mary, Newtownforbes, county Longford, is being erected on a site granted by the Earl of Granard, K.S.P. The first stone was laid on the 1st of May last; it is now nearly ready for roofing. It consists of nave and chancel, side aisles, and side chapel, and sacristy. The east windows are triplets of lancets; the windows of north and south aisles are couplets of lancets. There is no clerestory. A bell-cot surmounts the west gable. The clear dimensions are 97 feet 6 inches by 53 feet. Mr. Gardiner is the contractor. The materials used are rubble and limestone dressings.—The Church of St. Mary's, Kilronan, Keadue, county Roscommon, is being erected near the ancient church of Kilronan. The plan comprises the usual arrangement of nave and chancel, aisles, side chapels, south porch, double bell-cots on west gable of nave. The style is Early Decorated Gothic. The west window of nave is of three lights, under a receding arch supporting the bell-cot. The east window of chancel is of three lights; the north and south windows of aisles are of two lights. The dimensions in clear are 100 feet by 53 feet 6 inches; the materials used in the walls are red sandstone, with white limestone dressings. The contractor is Mr. Barker. Mr. J. J. McCarthy, R.I.L., is the architect to all the foregoing works.—Designs have been prepared by Mr. Bourke, architect, for enlarging and improving the Franciscan Church, Waterford, by adding additional columns to the interior, and removing the present roof. A continuous entablature will be constructed over the present columns, from which will spring a lofty cylindrical panelled ceiling, covering the nave; the aisles will have lofty segmental ceilings, with circular groins over the windows; an attic will be built over front pediment to conceal the additional height of roof.

SCHOOLS.

Ireland.—At the Presentation Convent, George's-hill, Dublin, extensive poor schools have been commenced. The building will contain, besides the basement, four schools, 40 feet by 25 feet each, and 17 feet high, together with entrance hall, stone stairs, class-rooms, cloak-rooms, &c. The exterior will be plain, faced with red brick; cost, about £2,000. Similar schools are about being built in connection with Convent of Mercy, Athy.—It is in contemplation to commence immediately, in Longford, large national schools, together with a convent for Sisters of Mercy, and extensive convent schools adjoining the intended new diocesan seminary of St. Mel; preparations are being made to proceed with the erection of the latter building. The great campanile of the cathedral of St. Mel is approaching completion; same architect.

THE STREET ARCHITECTURE OF LONDON.*

THE street architecture of London is a subject which I feel may be treated in many different ways, and which admits of a much larger amplification than I at all contemplated when I ventured to put my name down in the list of lecturers, with a promise to say something upon it.

Thus, the associations attaching to the different streets and houses; the way in which this great city has gradually grown since that not very remote period when old London wall was its boundary, and the outworks of the Barbican stretched into the adjacent fields, till it has reached its present gigantic dimensions; the origin of the names of divisions of the city and of streets, and many other peculiarities—might all afford the subject of interesting disquisitions, but which would most of them be more antiquarian in their character than would be suitable to the special views which this society desires to advocate. I will step aside, however, to point out one practical result of the "metropolitan improvement" going on in the present day, which is perhaps overlooked, but the serious consequences of which will certainly be discovered by future inquirers; and that is, that the new system now carried right and left, according to which the names of streets are simplified, while subsidiary names are done away with altogether, and the entire numbering altered, so as to expunge all minor distinctions where possible, ranging a long line under one appellation, will certainly tend to obliterate numberless spots of interest for which the future antiquary or lover of art reminiscences will search in vain. But it is not, after all, so much that old spots are marked under new designations, and old streets dubbed with new names, as that a very great demolition and rebuilding of entire streets to make way for new or of old houses in old streets, is taking place; so that if London is not being transformed as quickly as Paris has been, it is at all events undergoing the process as completely, though more slowly, and at the present rate some fifteen years hence will witness almost as great an alteration; and this, be it remarked, is not done by any means upon that well-ordered system and under that controlling power which exists in the foreign capital. How far such a system as that would be beneficial to us is a question which I shall just touch upon in the course of what I have to say.

The antiquary may experience a pang at the disappearance of the old landmarks of history, and of spots hallowed by the footsteps of those great in literature or art; but for the most part the lover of the fine arts can afford to view these inroads at least without regret: occasionally, indeed, he may find cause to grieve, but this is rather when some object of beauty becomes lost or obliterated. For example, I observed very recently that the old hall in Bishopsgate, built for Sir John Crosby in 1471, interesting to the antiquarian as having been the council chamber where Richard of Gloucester held his secret council, and whence he ordered Hastings to the block, and worthy of notice from the lover of art on account of its architecture, has at last descended to fulfil the very ordinary purposes of a wine merchant's cellar—a fate which the handsome old hall hardly deserved, and which we must all regret. That the old houses of the early part of the last century, with their originally careful, but now more or less dilapidated, brickwork, their window-frames flush with the face of the wall and fitted with heavy sashes, wooden cornices and doorways (well designed though those latter often were), should make way for modern structures, no one need regret; the roofs of these buildings were often picturesque in their outlines, but on the whole they had very little art about them externally, and they did but prepare the way for the Harley and Baker streets of more recent era, whose day I trust is gone for ever.

London, perhaps, has fewer remains of its former self than might have been expected from its age and long and ever-growing prosperity—though, in truth, it is this very prosperity which has had much to do with the demolition of old buildings. Old London, unlike some of the better preserved Continental cities, was built mostly of wood, plastered over; liable, therefore, to decay, and quite unfit for many purposes to which buildings of stronger construction might have been applied when altered circumstances came, and which thus might have been preserved. Buildings of stone walls and oak floors would have made very good warehouses: not so the old half-timbered houses, with their gabled fronts overhanging story beyond story.

London in many parts may certainly be called picturesque, full of sites offering fine opportunities for effect. One part has grown out of another, as occasion made necessary. No generally dominant idea can be said to prevail; it has spread, and that to a most inconvenient extent—unfortunately, not upwards, by which it might have become a far finer city; but a great growth of area has taken place, adding nothing at all to the general effect. The sites I allude to are not such as Oxford-street or the Strand—broad, straight streets, which might be flanked on either side by lofty buildings, with a predominance of long, level cornices and lines in their composition, like the new Parisian boulevards—but Holborn-hill, Ludgate-hill, Fleet-street, Cheapside, Whitehall, Piccadilly, &c.—localities which, all of them, invite that particular treatment which we find exemplified in the new buildings in Bishopsgate-street, opposite Crosby Hall, a coach-builder's premises near the Park, in Piccadilly, and those very striking schools in Bloomsbury, with others I might name. In the situations above named, how can the eye be satisfied unless there is a broken and well-defined sky-line, a certain amount of irregularity, order within disorder, in that which we call picturesque, an acceptance of every little difficulty in order to clothe it with beauty and meaning.

There is something so oppressive to the imagination if one pictures sites like these as being rebuilt in the studied, carefully cut-up, divided, and subdivided styles of Italian architecture, as practised in this day, that one would almost rather they remained as now, with little or nothing to boast of architecturally, as a whole; and let it be specially borne in mind that you, who are not building houses yourselves in these localities, may yet be able to influence others who do so. Every building will become an item in the final result, and I know how often everything is overlooked except mere utility—nay, more, that the architect is often blamed if he is supposed to give much attention to external appearance.

Writers in the public papers commonly speak of the architect as being the ruling power in all cases. Indeed, he is no such thing, and in the majority of instances he is obliged to give up many points which he would far rather have maintained; and in many more cases he knows beforehand that to attempt what his client would call wild vagaries, or pretensions display, or needless outlay, would lose him his business, and soon compel him to retire, without even what the advertisements call "a moderate competency." Where there is an intentional

and studied effect visibly apparent, and the result of which is bad, of course the architect should be blamed; but this is not the reason of failure in the great majority of instances which excite adverse criticism. If I see a design, in one part of which the architect has set his thought, which he has filled with the impress of his own mind, where he has ventured to indulge in some piece of good and effective design, and has dared to introduce some judicious and well-studied ornament—almost by stealth, as it were—I know I must absolve him from blame if the rest of the design be bald and uninteresting, flat and commonplace, or even in some aspect of proportion or arrangement offensive.

In street architecture the surface decoration has, for the most part, a secondary office to fulfil, the buildings are seen in a sharp perspective, and the projections, reveals, and solids contribute most to the effect, particularly bay windows or corbelled turrets, and an effective treatment of the roof, which latter, I think, should not have too much projection, but should cut well against the sky, and should obscure as little as possible of the upward view; in street architecture especially do the roofs play a most important part, both by the picturesque outline they may present, and by the more varied effects of light and shade which they contribute where the light may fall. I cannot well imagine any street ugly where there is a general harmony of main lines, and a well studied and picturesque treatment of the sky-line; while I cannot imagine a plain row of houses looking very well, where there may be an elaborate care bestowed in the treatment of the flat surface, but which ends only with a plain level parapet, presenting one never varying effect against the sky, and throwing one dead shadow on the opposite side.

In truth, the elements of good effect, if not of beauty, in street architecture are much simpler than most people imagine; if the main outlines and general proportions are good, if the architect's practised hand and trained eye has thrown the parts together with a regard to fitness and simplicity, the absence of ornament and costly decoration will hardly be felt at all—not that the capability to impart this satisfying and happy result is the easy and early attainment of the architect; on the contrary, it is, perhaps, one of the last things he learns, for it is an easier matter to design an ornamental feature, good in itself, than to know well beforehand, on the paper, how to give the best effect to the masses of buildings in execution, where so many extraneous causes may conspire to make or mar the success of the composition. Grouping of the masses and telling outline against the sky are certainly the main things to be observed. The building erected opposite Crosby Hall, and before alluded to, is very ornamental in its details, but if nearly all that ornament were dispensed with it would still look almost as well; this may also be said of the new "Life" offices, in Bridge-street, Blackfriars, and of some of the new hotels which have recently been erected; but for admirable outline, balance of parts, and grand general effect, what can exceed St. Paul's, as seen from Ludgate-hill? Is it the sculptured pediments or other architectural enrichments which attract the eye, and fix the building on the mind of the beholder? or is it the towering magnificence of the lofty dome, and the play of light and shade, the solidity and repose, the breadth at once and the lightness of effect of the whole composition? I know of nothing to surpass the view obtained of the Cathedral from the point above named. As the roof in Gothic architecture, so the dome and cupola is the great element of picturesque treatment in Classic architecture; and it is partly, perhaps, because roofs are more common and more useful than domes, and that lowness of pitch will harmonise with Classic architecture and not with Gothic, that the latter has gained so much in public favour. That the want of a fitting accessory of this kind is felt and acknowledged is sufficiently proved by the fashion lately set in, of making high and steep sloped roofs with or without a flat top, and in this way Classic architecture redeems itself almost entirely from reproach in this respect. I may instance the Tuileries as a striking proof of this; and among ourselves we have many instances—the most recent, perhaps, is the Duke of Buccleuch's house, at Whitehall-gardens, though whether the feature here is treated altogether judiciously may be a question for the critics.

The bright clear sky of Greece, Egypt, and Southern Italy, may, perhaps, form the very best background for the beautiful temples, with their long straight cornices and flat pediments cutting clearly against it, and they may be the most appropriate forms to be relieved by it; but in our northern climate the sky is hardly ever clear of clouds, which present forms of every possible variety in every direction and inclination, and mostly of curved outlines; it is not harmonious to rule against this background long level lines without break or intermission, but, on the contrary, the steep, straight, or swelling gable, plain or stepped, the curved dome or roof, and every other feature giving play of line against the sky, is harmonious, and in unison with that background in connection with which they can alone be seen.

Will any one deny that in a long continued façade of buildings—say the Rue de Rivoli—it is most refreshing and agreeable to come to a break where there is a design of another character, successful in the particulars to which I have alluded? It is, however, not because the design may be what is called "Gothic" that it will prove deserving of favour above Classic; there are some new Gothic houses on both sides of Cheapside, but they both of them fail to give so pleasing an effect as a smaller and less pretentious building now just finished in Old Broad-street; because, in the former cases, the old level line of parapet is adhered to, while in the latter a gabled roof finishes the design. A merely curved or sloped roof, so long as it can be seen from below, will go far to supply what is wanted. The French are fully aware of this, and always let their roofs be seen; and, among others, I may mention the Universal Marine Offices, in Cornhill, as an instance of the truth of this remark, giving the whole building a more pleasing form, and one which the eye readily singles out, in spite of the ornamental and towering structure occupied by Messrs. Sarl, in the neighbourhood.

What I have said is, however, perhaps rather as hoping to influence the future, through those who may agree with me, than as speaking of the present. Our street architecture is, upon the whole, lamentably deficient in this attribute; and when one really feels how wonderful the change would be if any of our fine main thoroughfares could be remodelled with careful study as to the roofs, it is impossible to help dwelling on the point, and very earnestly entreating all who can do so to consider and to advocate the subject as opportunity arises, the difficulties interposed by the Metropolitan Building Act notwithstanding.

There is, however, another point in connection with our street architecture not easily to be dealt with, but which it would be most desirable to control if it could be done, which is, that it constantly happens that new buildings very much spoil one another, and very needlessly; every man considering just exactly what he has before him, and utterly ignoring what will exist on each side of his design

* Paper read before the Society for the Encouragement of the Fine Arts, 10th April, by Mr. JAMES EDMESTON.

when executed. The result is most painful; moulding and cornice are abruptly cut off, every feature is utterly at discord in each case with the others: no pains even is taken to render the design complete in itself, and the front looks as if it had been intended to be one of a row, which, by some change of intention, was never continued. To enumerate instances would be needless, every main thoroughfare exhibits them, and strangers must be struck with this state of things as a peculiarity of municipal management of a most extraordinary character.

I fear no ordinary means are sufficient to cure this state of things. In the present state of architectural feeling, while the battle of the styles is either breaking out in open fury, or smouldering out of sight and ready to break out, there is an habitual disregard of other than personal feeling, and rather a delight in showing contempt for all work of a different character brought into juxtaposition. It becomes, for example, an article of faith to show as much as possible how the creed professed by the disciple of Gothic architecture differs from that of the Classic architect, who has been at work on the next plot of ground, and *vice versa*, though, perhaps, the injury sustained is at least equal to that inflicted. All this is wrong, and is, perhaps, at the present moment the greatest bane of our street architecture, every integral part destroying its neighbours as far as it can, whereas the study should be to make the whole as perfect, as a whole, as possible. Now, far be it from me to recommend that public censors should be established in matters of art, or that there should be any additional legislation in such matters; still I do think that some general rules might be laid down applicable to our main thoroughfares, and which would injure no one, interfere with no private rights, and which would succeed in reforming to some extent the present state of chaos. For example, just as a certain line of front is established, let certain main lines of elevation be fixed, which shall not be departed from; let the height of the ground-floor stories be fixed, the line of the top of the one-pair windows, the line, say, of the coping or finishing gutter, leaving all above that free. Now, this would only so far control designs as to enable the architect to show his talent, which would enable him to keep these main lines as boundaries, while he would fill up between them as suited the requirements of the work in hand. He might in the interval have fewer or more stories than his neighbour, he might divide them differently, and an absence of all sameness would be secured; but there would be just so much control over the *ensemble* as would tend to promote a general harmony of effect. And if, instead of every man cutting off his projections ruthlessly just where the centre of his party-wall may come, he was compelled, in a give-and-take way, to return and finish them properly, while the lines of one composition were made either to lead out of those already established or else to be made properly distinct, I can believe that a great gain in our architecture would be accomplished, while there would be as much freedom as there is now. A government or a municipal body has something to answer for in this respect. What shall be said if the re-arrangement of the new Government offices at Whitehall is not complete as a whole, every part helping every other part? How admirably is this carried out in the capital to which we have before referred. I think it is a disgrace to our "local management" that the beauty of our city is not cared for in its several districts as well as the cleanliness, and I believe it might practically be done.

Many new streets and approaches are now being laid out, some of the most important relating to the Thames embankment, and now is the time for making some effort in this direction. The present Chief Commissioner, Mr. Cowper, I am able to say, is most ready to listen to suggestions; and when a deputation waited upon him some weeks back to point out the desirability of laying out the new streets so as to lead off to many points, and to gain the best advantage for existing buildings, as well as to open the view to new buildings in the best way, he requested the Institute of Architects to appoint a small committee to bring into form and to discuss these very questions, with a view to insuring the best attention to them. And this state of things—the representative of the Government, working with the representatives of the lovers of art in carrying out great public improvements—is an encouraging guarantee that wisely-directed efforts will not be made in vain.

London is not a "show city"—not a place of European resort for pleasure and gaiety—but the great banking-house of the wide world, the busy mart of the universe, too much taken up hitherto with contemplation of its own growing prosperity, with very little care of external appearances, like a rich merchant, who, well knowing the filled coffers at his banking-house, cares very little for the threadbare appearance of his outward garb; yet there are spots which the busy citizen daily treads without observation, but which may well arrest the stranger, and must not be passed without remark.

What can be more striking than the views of the great city from some of the bridges as you approach from the southward, especially London and Blackfriars bridges? Walk up Ludgate-hill, stand at almost any point about the Exchange, or in Holborn, where you can take in the view of the rising hill and some part of the broad roadway beyond; stand where the several great thoroughfares meet at the northern end of London-bridge, or look upward from the lower ground as you approach its southern end; and while from many of these positions you will see examples of architecture of which any country might be proud mixed with buildings of the commonest character, and in the worst taste; you will, if you can look with the unaccustomed eye of the stranger, forgetting for the moment how constantly you tread these spots intent upon anything rather than giving them the least attention, you will see much to admire, much to be struck with as a whole; you will be conscious of a general impression as powerful as any you ever experienced when looking for the first time on great cities in other lands, and the imagination of the artist will find ideas the most suggestive and varied.

I might single out many buildings recently erected, and which go very far to redeem our streets from the architectural barrenness of which I have complained, but I feel it would be somewhat presumptuous for me to do so, and that the task is better left in the hands of a non-professional critic. You have heard their treatment which I advocate, and doubtless several examples of it will have occurred to you during my observations. If you should not agree with me, you will at least judge and compare as you have opportunity, and you will arrive at a determination, one way or other, in your own minds. If architecture does not progress as it should, it is because there is a public apathy and want of interest, arising from a lack of knowledge upon the subject not creditable to us as a nation, and which, of course, begets a lack of taste, or, perhaps, a bad taste founded on no principles and guided by no rules; so that we occasionally hear in high places most extraordinary reasoning upon this subject when some great occasion brings

it to notice—or we find an individual absolutely appointed to foster, encourage, and promulgate art, able to convince himself that architecture is a mere mechanical effort, not exactly of heaven-born genius, because any one may perform it, nor yet of mental training, because, says an authority, there have been great architects who, it seems, have had little of this; so that careful loving study of the subject, with toilsome experience in it, go for nothing. All very unworthy, mistaken, and contemptible fallacies, which, if they could have any weight at all, would tend to undo every good that has been of late years effected, and would end by extinguishing one of the three fine arts entirely. Such mistaken statements stand rebuked by the great monuments of past ages as well as by a thousand efforts in more modern times, and, I may add, stand exposed in their absurdity by every effort to act upon, or to give any practical effect to, them.

I ask the members of the Society to guard with a jealous care any attempt to lower the standard of art, or to introduce meretricious views with respect to it. It may be false taste in sculpture, or wrong principles in painting, or a numbing influence, a cold shade, a cruel detraction thrown over the noble art of architecture, which, if it were possible, would destroy all that has been done this twenty years and upwards to excite higher aspirations and truer feelings, but which shall not prevail, but shall be once for all condemned by an enlightened public opinion, true to itself and to what is due to the national honour in these respects.

THE DECORATION OF THE INTERNATIONAL EXHIBITION BUILDING.*

THE building for the International Exhibition, now so shortly to be opened, has been lucidly explained by Captain Philipotts, in the paper read before you in December last; therefore, it will be unnecessary for me to take up much of your time in a description of the various parts of it, and I will only briefly recall to your minds the main features and arrangement of the building, in order that you may more easily understand me when I refer to them in my description of the decoration. This arrangement of the building will be easily understood by referring to the ground-plan. The principal front faces the Cromwell-road, and has a south aspect; it extends nearly 1,200 feet. On the first floor of this front range the series of picture galleries. Parallel with this front is the nave, 800 feet long, and terminating at each end in the great domes, each 160 feet in diameter. From these extend again, north and south, the transepts, having each a length of 200 feet on either side of the domes. The height to the pitch of roof in nave and transept is 100 feet, and the width between the columns 85 feet. The great domes have a diameter of 160 feet, and rise to an interior height of 200 feet. Galleries 50 feet wide extend on both sides of the nave and inner sides of transepts. Other galleries, 25 feet wide, are carried round the outer sides of transepts and sides of walls of picture galleries, and one 12 feet wide against walls of refreshment rooms.

Parallel with the nave, and on either side of it, are the glass courts; those on the south side being 200 feet wide, those on the north 87 feet.

On the north side of this area is a large range of buildings, forming the refreshment rooms; through these, under a triple archway, nearly opposite the main entrance from the Cromwell-road, is an entrance to the Horticultural Gardens, of which a most pleasing view is here seen. This completes the description of the main area of the building; but at both extremities extend two very important additions, namely, the eastern and western annexes, the latter nearly 1,000 feet long, and the former 775 feet.

Having refreshed your memory as to the form, size, and arrangement of the building, I will now speak of the decoration of it.

We will enter by the great archway in the centre of the south front, and passing by the staircase which leads to the picture galleries, and to which we will return by-and-by, we proceed to the nave. I confess that when I first saw this interior my heart quailed; its general aspect was not encouraging; the day was damp and bleakly cold; the rough polygonal arched principals and diagonal boarded ceiling looked heavy and difficult to manage; the light from the clerestory windows fell in faint streams on the muddy road, that was then the traffic way in the interior; masses of dark scaffolding, obstructing the light from where the domes were then being erected, and the various trials of colouring which had been already made, one, at least, of them by an able man, showed me that it would require very careful consideration indeed before I should decide upon what style of decoration to adopt. Do not let me be unjust, nor let my own apprehensions as to a successful treatment of the decorations lead you to suppose that I mean to reflect on the building itself. When I came quietly to consider all the features of the construction, I found that those apparently heavy principals only required to be properly treated in colour to be sufficiently light; that they were also of most ingenious construction, that the proportion was pleasing, and that the light of the clerestory windows was amply sufficient. I fear that many may have seen the building under the same adverse circumstances that first presented it to my view, and have passed criticisms not so just as the merits of the undoubted talented contriver of the building should deserve. Pardon me if I have wandered for a moment from the subject of my paper, more especially as I earnestly hope, that in any discussion that may follow it will be borne in mind that it is only the decoration of the building which is now before us.

Well, we are in the nave. How to decorate it? I had not too much time to think; the work must be done. It was January; the 23rd when I received the authority from the Royal Commissioners to assume the decoration of the building with the entire responsibility of the results—the work must be completed by March.

After careful consideration I decided that the general tone of the roof must be light, and that the best colour would be a warm pale grey; that the arched principals must be made to stand out clear from the roof; that they must look well in a perspective of 800 feet; and that they must not look heavy or confused as they approached each other in the distance. No single colour would do, and after a pretty stiff bit of reflection of twenty-four hours, I confirmed myself in my opinion of what would be the most likely way of treating the principals.

I have remarked that the form of these is polygonal, and is best explained by the scale-drawing marked (A). They are in three thicknesses, the centres of the outer planks covering the joints of the inner ones.

I consider that the form precluded the use of a continuous repeat ornament; I therefore decided on following the form of construction, and adopted panelings of blue and red alternately, relieved by coloured lines, intersected at the joints by circles of black, on which are gold stars, and from these spring ornaments in vellum colour with green in the filling, as shown in the coloured drawing.

Following out this arrangement, I had a pattern painted on paper of the full size of one of the principals, and it was fixed in its place within a week from the time of my appointment; part of that identical pattern is now in this room; it has never been altered, and thus exactly it has been carried out throughout the roofs of the nave and transepts.

Until the principals were coloured, it seemed to me that the thicknesses were lost; I wished to make the construction evident, and I therefore coloured the two outer edges in chequers of black and vellum colour, and the centre edge full red. As to the bracings above the polygonal arches I coloured them the wormwood colour, with red or blue coloured lines on the face, and the under thicknesses red.

I have said that I decided on warm grey for the roof of nave. I did so because it gave space and lightness; and on its surface I introduced an upright scroll ornament in red, with gold star-like rosettes sparingly introduced. My object in this ornament was to raise the apparent pitch of the roof, and to relieve and warm the effect of the grey. The horizontal purlines, on the contrary, I kept purposely light, so as not to depress the rise of the roof, or interfere with, or confuse the effect of the principals. The ridge piece of the roof, in itself comparatively small, I marked as strongly as possible, as the apex in black and vellum

* Paper read by Mr. J. GREGORY CRACE, before the Society of Arts, April 9th.

white, *en chevron*; on each side I coloured a margin of maroon red, and a little below that a bordering of very warm green, shaped to accord with the top scrolls of the red vertical ornament, the green being relieved with rosettes of gold colour. At the base of the slope of roof this green is again introduced in much the same way, and the band of maroon also. Below this are the clerestory windows.

The next important features in the nave are the iron columns, supporting the principals as well as the galleries. These I have painted pale bronze colour, relieved with gold colour vertical lines. The capitals are gilt; the grounds being picked in rich red or blue alternately; the centre blocks of the columns are also coloured red, with bands of blue, or, *vice versa*, the mouldings being gilt, and the same style of colour is continued to the bases. The top plate above the columns is painted bronze colour, relieved with light gold colour ornament on the upper part, and a vitruvian scroll in gold colour, with a maroon red base on the lower part.

The gallery railings are light bronze colour, the rose, shamrock, and thistle ornament being partly gilt, and the whole backed with deep red cloth. The plate under the gallery is painted oak colour, relieved with deep brown interlaced ornament.

I have kept the part below the line of arches purposely quiet in colour, in order that the brilliancy and richness of the various articles exhibited may not be interfered with. The roof, on the contrary, is rather vivid in colour, to carry up, as it were, in some degree, the gaiety of the scene below; and this will be still further sustained by a series of banners of the various countries whose products are assembled in this International Exhibition.

Much variety of opinion has been expressed at my introduction of the vivid colours in the arched principals of the nave; but I think that many who fancied it would look too powerful, will confess their surprise at its comparatively quiet effect now that it is completed. The colours being properly balanced have neutralised each other. Most of you probably know that blue, red, and yellow, in the proportion of three, two, and one, when mixed with white, produce a grey, exactly the same as a grey produced by mixing black and white. I will show you. I take ultramarine blue three parts, vermilion two parts, and chrome yellow one part. I mix them together, add some white—you observe it is grey. I take some black and white, mix them, and identically the same grey is produced. If you paint on a disc radiated stripes of blue, red, and yellow, in proper proportions, and make the disc revolve rapidly, you find grey produced, the same as if they were stripes of black and white. The effect of the roof of the nave exemplifies the theory.

I have heard it said by some that it would have been better to have employed panellings of one colour instead of two to each principal, and made the principals alternately blue and red; in my opinion they would have been utterly disappointed; the striped contrasts would have by no means given the softness, richness, and glow of the present colouring. To convince myself I, at one stage of the colouring, tried, by fixing blue paper over the red panellings in one principal, and red paper over the blue panellings of another; the effect was not nearly as good, and I was confirmed that the principle I had adopted was the right one.

You will find this principle of counterchanging colours adopted in most of the decorations of the early masters, which abound in Italy;—those decorations, so beautiful, so interesting, rich, glowing in colour, full of fancy and taste in the ornament, the masses well arranged, the most perfect harmony everywhere, and dignified by often acting as the framework of the highest gems of art. My son, who has been lately studying from these works in Italy, has made a series of sketches from some of them, which I thought might illustrate the observations I am addressing to you, and prove not uninteresting to those who are fond of decorative art.

You will find in the roof of the Upper Church of Assisi, in the Chapel of St. Corrado, of Orvieto, and in the Palazzo Spina, examples of counterchanging of colouring, and in the roof of the Cathedral of Lucca the chevron of black and gold. In fact, the works of the Italian decorators of the fifteenth century afford most valuable lessons in ornamentation and colouring. But I must not be led astray from my more immediate subject. Having described the nave, I will now proceed to the domes which rise at either end of it, and form a point of intersection with that and the transepts. They are undoubtedly the main features of the building.

In plan their form is dodecagonal, or twelve-sided, but are made to assume the appearance of an octagon, because the arches towards the nave and transept cross each other, and form a kind of angular-arched opening of 85 feet span, the intermediate arches being about 35 feet span. From the floor of the nave to the springing of the domes is 114 feet, the total interior height to the crown of the domes being about 200 feet. There are twelve main ribs to each dome, meeting in a sort of ring plate, and thence eight of them carry on to the centre. The crown of each dome has an ornamental zinc covering, as explained in the drawing; all below this is glass.

My principal difficulty in carrying out the decoration of the domes was, that I could see nothing of them. The scaffold formed a series of solid stages or floors, through which it was impossible to view anything, and I confess I never could mount the ladders above 100 feet; but even there the scaffolding was so thick that I could see nothing of the top, and very little of the cornice, fascia, and walls.

At last Mr. Ashton contrived to get for me an open square box into which I got, and was drawn up by means of his beautiful little engine very pleasantly to the top; yet when I got there the ceiling almost touched my head, so that I had no opportunity of judging beforehand of the effect of distance and light upon my colouring, and I knew well that they were very formidable elements for consideration. The knowledge that the scaffold would be taken down before I possibly could judge of the effect, and that when once down I could never hope to touch my decoration again, caused me many an anxious thought.

My drawings will best explain to you the colouring I adopted for the top of the domes. The main ribs are painted bright red, with spaced black and white at the edges, and a fine gold line up the centre appears at intervals of about four feet into lozenges and circles containing gilt stars on a blue ground; where the main ribs reach the ring plate I carry round the red, marking the points of intersection with black and white; thence the eight main ribs are painted deep blue, relieved with red, gold, and black, until they meet in the centre pipe or pendant, which is gilt bordered with red. The shaped covering, or umbrella, as I am accustomed to call it, is painted light blue; gold colour and gilt rays diverging from the centre and streaming a considerable way down the blue, the shaped outline of which is bordered with red and gold ornament.

In decorating the walls of the domes, the solid parts between the arches and the springing of the roof, it was necessary to consider the probable effect of the great mass of light above. On the one hand it was desirable to sustain it with sufficient strength of colour, on the other it would be dangerous to make it too heavy.

The moulding of the cornice and fascia are painted vellum colour, very slightly relieved by gilding; the trusses are gold colour, the fascia between them is red, with a vellum patera; the soffit is green. The broad fascia below is painted blue, and on it is inscribed in gold letters, three feet high, the exordium of David, in the 29th chapter of the first Book of Chronicles, "Thine, O Lord, is the greatness, and the glory, and the victory, and the majesty: for all that is in the heaven and the earth is thine;" and "O Lord, both riches and honour come of thee, and thou reignest over all; and in thine hand is power and might, and in thine hand it is to make great."

The large iron columns, which rise nearly 100 feet high, are painted dark maroon colour, their capitals being richly gilt. The panelling between the arches and the frieze is painted in shades of red, relieved by coloured lines; in the four broad compartments are inscribed, on dark green panels, Europe, Asia, Africa, and America; below, on a circle, are the initials of those so beloved by us all, Victoria and Albert. On the eight spandrels to the four main arches are medallions, eight feet in diameter, by Mr. Burchett, of the Kensington School of Art, emblematic of manufactures, commerce, and the various arts and sciences which lend their aid. These were executed in an exceedingly short time, and, like all the rest of the work, with no opportunity of judging how they would look in their elevated situation. I should add that round the red panelling is a broad margin of sage green, on which are stencilled paterae. The moulding of the arches is painted vellum colour, the top fillet being gilt, and the face of them ornamented with vitruvian scroll in dark colour.

The walls at the gable end of the nave and transept are treated so as to recall the arched form of the principals. Under these a semicircular panel is formed of warm brown colour, bordered by a broad blue margin, on which are gold stars. Inside the panels are written the following sentences:—

On the east end of nave—

"The wise and their works are in the hand of God,"—Ecclesiastes, chap. ix., v. 1.

On the east end of transept—

"Alternately the nations learn and teach,"—Cowper.

On the south-east end of transept—

"Each climate needs what other climes produce,"—Cowper.

On the west end of the building the sentences are in Latin, being the part occupied by foreign exhibitors. At the end of nave is written—

"Gloria in excelsis Deo et in terra pax."

At the north-west end of transept—

"Domini est terra et plenitudo ejus."

At the south-west end of transept—

"Deus in terram respexit et implevit illam bonis suis."

Inside these semicircular panels are a series of radiating panels, painted maroon, and bearing the names of the various sciences and arts which have affinity with the objects exhibited. The coloured drawing will more directly explain what I have thus endeavored to describe.

I have mentioned that on either side of the nave extend the series of courts roofed with glass. These admit of very limited decoration, and the colouring I consider should be of a subdued and retiring character. The objects exhibited are to be the show. The brick walls which form the boundary on one side not being dry, it was necessary to have a colour which would not be materially affected by that circumstance. I adopted a quiet maroon colour made with venetian red and purple brown. The columns are painted pale bronze, relieved by gold colour.

The skylight frames are painted cream white, relieved by lines of red and blue alternately. Under the galleries the ceilings are painted very light grey, the joists cream white, the bottom edges lined blue, and the girders lined maroon red.

Let me here offer a few words of advice to the exhibitors of manufactured goods in silks, woollens, and cottons.

Many rich and valuable stuffs were, seriously injured at the Exhibition of 1851, by injudicious arrangement of them. Broadened silks of gay colours, or printed woollens or cottons, are best exhibited if somewhat shaded from the light; it would be well, too, if they were contrasted with deep tones of velvet or other plain material.

In the arrangement of plain fabrics, such as cloths, merinos, or velvets, much will depend on the way the colours are brought together. Avoid blazing contrasts of colour, such as bright red next bright green; or bright blue next bright yellow; such contrasts are not harmonious—let one of the two colours always be subservient to the other. It is not so much what colour a material is, but how that colour is made to appear. It is necessary to bear in mind that all colours have their complementaries, which add to or detract from the beauty of the adjoining colours, according to what they may be. Thus, the complementaries of red are green; blue are orange; yellow are violet. If you cut out pieces of grey paper in an ornamental form, and stick a piece on each of the three colours I have named, you will find, in a shaded light, the grey will be fully tinted by the complementaries of these colours. But you cannot lay down precise rules. An experienced artist can bring any two colours together by properly modulating them.

Nothing is so charming and so refreshing to the eye as an harmonious arrangement of colours; they are "like a sweet chord of music to the sense." The band of nature never errs, whether it brings together scarlet and crimson, as in the cactus; scarlet and purple, as in the fuschia; yellow and orange, as in the calceolaria; or the colours in the varied plumage of exotic birds—the harmony is always beautiful, ever perfect. The laws of harmonious colouring are a necessary part of the knowledge of the manufacturers of coloured fabrics.

I will suggest a few contrasts. 1. Black and warm brown. 2. Violet and pale green. 3. Violet and light rose colour. 4. Deep blue and golden brown. 5. Chocolate and bright blue. 6. Deep red and grey. 7. Maroon and warm green. 8. Deep blue and pink. 9. Chocolate and pea green. 10. Maroon and deep blue. 11. Claret and buff. 12. Black and warm green.

Resuming our immediate subject, we will now return to the principal staircase, which we passed on our entrance from the Crociwell-road. The walls of the lower part of this staircase will be painted maroon red, as a background for the statues, bas-reliefs, and other art works which will be placed here. The upper part of the wall, or rather space above the wall, will be enclosed by the various specimens of stained-glass. Arrived at the landing, we enter the centre vestibule, from which we first gain the view of the magnificent range of picture galleries, extending 500 feet on each side. This vestibule will itself be filled with sculpture. The walls are coloured subdued red up to the string-course, above that they are sage green.

The picture galleries on the east side contain the collection of the British, those on the west side the foreign schools; in size and arrangement they are exactly the same. The width of the galleries is 50 feet; the wall is 31 feet high, up to the cornice, from which springs a deep cove supporting the centre light.

Many of the pictures to be exhibited having been painted many years, it was essential to have a very low tone of colour for the walls; I adopted a sage green. When the colouring was partly done, and there remained some of the white wall still uncoloured, it was thought by many that the tone would be far too dark, and I mention this to show how difficult it is to judge of effects of colour till all the parts are complete. I never at present hear any fears expressed of the too great depth of colour. The cornice is painted vellum colour with maroon in the hollow, the ground of the cove is tinted of the same hue as the walls, but much lighter. I have divided it into two compartments by upright margins in vellum colour, on which is stencilled ornament on a deep ground; the compartments of green are marginal lines of maroon. The soffit is also vellum colour relieved by stencilled ornament in maroon, and the upper cornice is cream colour.

The end walls of the principal galleries are slightly decorated; on either side of the arched entrance it is intended to place statues, and therefore it was necessary to have a maroon-red panel background; this is carried up to the springing of the arch, and thence broken into five concentric panels; above these are painted ornaments supporting medallions, in which are inscribed the names of painters.

To show with what energy it was necessary to carry out the works, I will mention that the whole of the picture galleries on the east side were painted and decorated in five days. I was asked on Saturday if my designs were ready—I decided the colours on Monday morning, the work was commenced at mid-day, and completed mid-day the following Saturday.

At the end of the principal galleries we enter the auxiliary galleries, which have a length of nearly 250 feet on each side of the domes; in these will be arranged the collection of water-colour drawings, architectural designs, &c.; here I have adopted a lighter tone of the same colouring, as in the larger galleries.

Crossing over to the north side of the building we enter by the triple archway, which I have before mentioned, the immense range of apartments devoted to refreshments; unfortunately, the state of the walls is such, that it will not be possible for the present to decorate them, except, indeed, the three large rooms on the upper floor, where the ceilings are of wooden construction; but I must needs confess that nothing I could do on the walls would compete with the charming view to be seen from the windows which run the entire length of these rooms. The whole of the New Horticultural Gardens is seen with beautiful effect; all their ornamental parterres, fountains, and walks, bounded by the handsome colonnades and conservatory, being seen in greater perfection than from any part of the Gardens themselves.

Having thus described to you, very imperfectly, I confess, the decoration we have done, let me explain to you, briefly, how we did it. It was indispensable, in all the designs for the decorations, that they should be so arranged as to be easy of execution; that the important principle of "the greatest effect at the least cost," should be strictly attended to. Therefore, all ornament had to be done by stencilling, and all the colouring on woodwork was to be done in distemper. What the stencilling is I will explain presently. Distemper is a very ready means of colouring surfaces, because one coat of it bears out and gives a result more solid and more luminous than four coats of oil paint, but it has the disadvantage of not being preservative like the last, and it cannot be washed. Perhaps no one will ever discover the very rough state of the principals of the roof of nave, which are simply saw-cut, besides being blemished by the process of carting and lifting them. The

coat of distemper conceals all that. It is composed of whiting and size, made of any tint required by adding the usual colours.

Stencilling is performed by cutting out the pattern required in stout strong paper, which is then varnished over to strengthen and preserve it; taking care also to leave proper ties to keep the pattern together. But as example is better than precept, I have brought here a few of the stencils made use of for the decorations, and will show you how the work is done. (The workman here stencils some ornament.) I think that in the progress of the work more than 100 men must have been employed at this stencilling, out of whom, I have reason to believe, scarcely half-a-dozen ever did it before, and yet the work has been very well executed, and reflects much credit upon all those engaged upon it. I am happy to acknowledge the intelligence and perseverance of Mr. Hulsh, the foreman painter of Messrs. Kelk and Lucas, in directing these men. Also they will join with me, I am sure, in confessing how much they and I are indebted to the able assistance of my artist, Mr. Haeclin; nor can I be silent on the constant aid I have received from my eldest son, whose sketches on these walls will sufficiently speak for him. The task I undertook was attended with difficulties of what I may call a diplomatic kind. The contractors were at the expense of carrying out the work I directed, and were naturally not desirous to be wasteful; the Royal Commissioners wished the work to look as well as possible, therefore, it is easy to be imagined that where one side used the whip the other pulled the reins; nevertheless, I feel bound to state that the contractors desired to have the decorations of the building well carried out, and that they have been actuated by liberal and unselfish feelings.

I have little more to say, but there is one word of thanks I cannot but give expression to on this occasion; it is to acknowledge with gratitude the encouraging support I have derived from the criticisms on my work which have appeared occasionally in the *Times* newspaper.

In a few days the International Exhibition will be opened, the collected industry, science, and art of the whole world, thus brought together, will be opened to your view. I trust that they will in no way be injured by what I have done.

ARCHITECTURAL MUSEUM.

ON Tuesday evening a lecture was delivered in the theatre of the South Kensington Museum, "On Encaustic Tiles and Tile Pavements," by the Rev. Lord ALWYNE COMPTON. We shall probably give a report of the lecture in our next.

Reviews.

Returns Concerning the Assistant Commissioners of Education and Inspected Schools in the Ten Specimen Districts.

THESE Returns, issued by the Central Committee of Schoolmasters, are published to show the very remarkable difference which exists between the statements of Her Majesty's Inspectors and those of the Royal Commissioners with respect to the results obtained in inspected schools, which has been the occasion of great perplexity ever since the Report of the Royal Commissioners was issued. Her Majesty's Inspectors, who possess considerable experience, and have daily practice in the work of inspection and examination, state that the elementary subjects are taught excellently, well, or fairly, in 80 or 90 per cent. of the inspected schools. The Commissioners declare that these schools have succeeded in successfully educating only a very small proportion of the children who pass through them; and the question is asked, whence arises this discrepancy?

In order to assist in removing this difficulty, the Central Committee of Schoolmasters determined some time ago to send out circulars of inquiry to all the inspected schools in the specimen districts as far as these could be ascertained. Nearly three years have elapsed since the majority of the visits of the Assistant Commissioners to these schools were made, and during that interval numbers of masters and mistresses have left the schools where they were then placed, a few are dead, and some schools have been closed. But, notwithstanding these circumstances, about 220 returns have been received, and the answers contained in them will be found in the return. Every return received up to the moment of going to press has been inserted. Although the list is unavoidably incomplete, it is believed that sufficient evidence has been obtained to give a correct idea of the manner in which the Assistant Commissioners examined the inspected schools in their districts.

From these inquiries it is found that, of the schools from which returns have come to hand, 87 were not visited at all, 162 were not examined at all, while in very few schools were the lower classes even noticed.

The Central Committee are convinced that the following conclusions must follow from an examination of the returns which they have received and tabulated:—

1. That the lower classes especially were almost entirely overlooked by the Assistant Commissioners, even in the schools which they professed to examine.
2. That the examinations made by the Assistant Commissioners will bear no comparison with those of her Majesty's Inspectors, in respect to their thoroughness and reliable character.

3. That no trustworthy judgment as to the real state of the instruction in inspected schools could be formed by the Assistant Commissioners from the personal examination which they instituted.

4. That if the conclusions of the Royal Commissioners are worth anything, they do not derive their value from the examination of inspected schools by their Assistant Commissioners.

The returns are dated from the Committee Room, Whittington Club.

A Letter to the Right Hon. the Earl of Derby on the Proposed Memorial to the Prince Consort. Darton and Hodges.

THE writer of this letter, "Omega," contends that "no imitation should be admitted" in the design for the Albert Memorial, and that we should repudiate all heathen symbolism.

The characteristics of English modes of thinking, feeling, and taste, are simplicity, truth, meaning, purity. Our life is earnest, domestic, practical; our habits plain and simple; our actions devoid of all extravagance. Our most deep or vivid emotions are betrayed by no gesticulation or histrionic attitudes. We are unaddicted to pomp, pageantry, or finery. Magnitude, apart from utility, excites no admiration; greatness is never identified with mere vastness of size; hence the gigantic statues which occupy our public places move no feeling of awe, no sentiment of admiration (!)

The ideal of a monumental memorial of a Prince who achieved no military glory, who effected nothing great in political affairs, who did nothing which can be presented in a mechanical form, but who has impressed upon our fond memories that which is immeasurably better, is that it should be appropriate, unique, and calculated to excite the same feelings as would arise in his living presence.

In conformity with these sentiments, the proposed obelisk should be associated with sculptures simply and truthfully representing the man whose memory we desire to honour. These sculptures should speak to the eye and heart of every Englishman in language he can understand, refer to feelings and sentiments with which he can sympathise, furnish lessons which will impress themselves on his memory, and excite a beneficent influence on his conduct. They should be framed on principles now vital and active, neither brought from the past, nor anticipate an imaginary and unknown future.

What, then, should they be?

First, a mere monolithic obelisk, however vast, would scarcely afford suitable space for sculpture, except intaglio.

It should be a majestic pile, rising upon a basis formed with three gradients; thus affording twelve panels or surfaces for sculptures and inscriptions.

Upon the lowest and largest, on a level with the eye of the spectator, we would represent—

1st. The Prince, with the Queen and all his family—every figure of the exact size of life—portraits as accurate as possible, grouped so as to produce at once the most life-like and picturesque effect.

2nd. Another panel should represent the Prince with her Majesty and the group surrounding them—also of the exact size of life, at the opening of the Great Exhibition—the most prominent event in his life. There, the accessories, selected with care and taste, would tell unmistakably the story of the action.

3rd. On another should be represented some scene—an event of his public life—perhaps by the throne, in the House of Lords, where the Prince was by the side of her Majesty, to support and sustain, by his presence, a woman, in the performance of those exalted and onerous duties, which would seem to require fortitude and strength almost superhuman. This was, in fact, the function he so well performed, to the inestimable advantage of this great empire.

4th. The above can scarcely be open to differences of opinion, if the principles here enunciated are admitted. The fourth tablet may be open to discussion. We would again suggest that the Prince and the Queen should be depicted together. Should it be in their walks on the slopes of Windsor? or inspecting together his farms, or gardens, with their occupants he so well loved? We would only avoid such objects as dead game, or instruments of death. These may be pleasing to sportsmen, but would be out of place on our memorial.

The inscriptions should be

A simple, truthful, full narrative of the Prince's life, written with a sparing use of titles and epithets—such a life as his own refined taste would have approved, prepared with as much care as the sculptures. It may be brief in extent, though full, as comprehending every important fact.

This narrative should be engraved on the stone faces, in four languages—for the middle gradient, English, German, French, and Hindustani. Why this latter? it may be asked; is not this fantastical? It is the language spoken by a numerical majority of the Queen's subjects—that is my reason for selecting it. If this is thought insufficient, let another be chosen; but this, by employing a smaller character, might be in two forms, Hindi and Urdu, in the Persian and Nagree alphabets.

On the four faces of the upper gradient I would repeat the narrative in the four languages of the great literatures of the past—Hebrew, Sanskrit, Greek, and Latin. The reasons have been already stated—the memorial is for an incalculable future.

The author then refers to a question which we have already dwelt upon at some length in a recent number of the *BUILDING NEWS*. He says:—

To return to the idea of a vast monolith; would not the cost be far greater than commensurate? That with our wondrous mechanical powers we could excel the Egyptians in the magnitude of public works is obvious enough. Would it not convey an erroneous impression of our tendencies and taste to expend a vast sum on an object not involving any utility. Would it not, in short, be contrary to our tastes and habits? Would the wisdom of its builders be esteemed in the next generation, when the cost is told to the wondering spectator?

A more imposing structure could be erected, either of large masses of stone, or with a core or foundation of brick, cased with polished granite slabs, not less durable and far more magnificent than a monolith; but either is equally adapted to the realisation of our ideas. Might not the unsculptured shaft be a monolith with an elevated base, forming the gradients and spaces for the sculptures?

How to Double the Value of the Great Exhibition to Exhibitors and the World. By a Non-Exhibitor. Effingham Wilson, Royal Exchange.

THE writer proposes to achieve this modest undertaking by establishing a—

World's International Encyclopædia Company, limited liability, capital £100,000, in shares of £1 each, all to be paid up before April 15. Said sum to be placed at the disposal of a competent board of directors, for the purpose of carrying out, in six or more different languages, an Encyclopædia or Manual of the World's Exhibition. All profits arising from the same to be devoted to the formation of International Societies for the advancement of the arts and sciences. All losses that may accrue therefrom to be shared by the subscribers according to the number of shares subscribed for; and the whole or any balance that may remain at the closing of the said Company, in November or December, to be returned, with any interest which may have accrued while in the Bank.

The Encyclopædia is to contain descriptions of every article exhibited.

MONUMENT IN DERRY CATHEDRAL.—A monument has just been erected in the cathedral of Derry to the memory of Captain John McNeill Boyd, of the *Ajax*, who was swept off the pier of Kingstown and drowned while attempting to rescue the crews of some shipwrecked vessels during a hurricane on the 9th February, 1861. The body of the monument is of white marble. Captain Boyd stands with his right foot on a block of stone, and points with outstretched hand towards a ship whose bows and rigging appear rushing towards the rocks, directing five of his crew to fling the coils of rope with which they are engaged to the distressed vessel.

LITTLE CASTERTON FREESTONE.—The *Stamford Express* says—"That this stone is applicable to ornamental as well as to useful purposes is satisfactorily proved by a specimen of workmanship (intended for the Great Exhibition), which we had the pleasure of inspecting at the residence of O. N. Simpson, Esq. (the proprietor of this quarry), at Stamford. Instead of exhibiting a sample of the stone in the rough, Mr. Simpson has prepared a column, resting on a pedestal and surmounted by a cleverly-sculptured figure of an Angel, with expanded wings. Inscribed in colours on the column are the words 'Little Casterton Freestone.' The work has been executed by Mr. William Hilliam, of Stamford."

Messrs. Thurston and Co. have made a fine billiard-table for the Great Exhibition which exhibits some good specimens of carving. The design is Mediaeval, the eight legs of the table being composed respectively of groups of four columns each, highly ornamented with rich carving; the panels all round contain battle and other scenes connected with the wars of the Roses. The character of the design is in every part capable of receiving adornment. The table is of fine-grained oak.

IMPROVEMENTS IN BUILDING, &c.

ORNAMENTING WOOD IN IMITATION OF INLAID WORK.—T. Bray.

This invention is carried out as follows:—Firstly, the inventor takes glue, or any kind of glutinous matter, and reduces it to the consistency of jelly; then, with a soft brush, such as is used by painters, gives the clean wood one even coat. Secondly, he takes the following compound, gum shell, benzoin, and any soft gum which dissolves in spirit, saponin and spermaceti dissolved in pure spirit of any kind, and with this composition draws the desired pattern upon the wood with a pencil, or by the aid of patterns cut as stencil plates, or otherwise. Thirdly, he takes any colour or staining material dissolved in water, and with a brush or tool, such as is used by painters, he grains or stains the whole surface in imitation of the wood, marble, or other substances required to be imitated. Fourthly, he takes pure spirit, and with a brush saturates and washes the whole thoroughly clean, by which means the stain will be removed from the parts of the surface where the composition above mentioned has been applied, according to pattern, but the stain on the other parts of the wood will not be removed therefrom when the spirit has evaporated. He polishes the surface as may be required.

HANDLES AND KNOBS OF LOCKS AND LATCHES, AND THE MEANS OF APPLYING THEM.—J. M. Hart and R. Lavender.

Here, when two handles, one on each side of a door, are used, one of them may be made fast to the spindle, heretofore, and the spindle is formed square, or of other angular form, with a thread cut into the angles to a length likely to be required, and to receive a nut, the external figure of which corresponds with that of a recess in the knob or handle, or so constructed that the turning of the knob or handle will, whilst it turns the spindle, hold the nut from turning thereon. The rosette, or rose, on the inside of the fixed handle is provided with blades or projections in a radial direction, adapted to pass into corresponding saw-cuts in the door; or it is provided with other projections to pass into corresponding recesses in the door, to hold the rose or rosette from turning. At the other end of the spindle there is a supplemental or false rose, or a plate with similar projections to pass into suitable recesses on that side of the door. On the opposite side of this supplemental rose, or plate, there is a cylindrical projection with a thread on what may be called the rose proper, or visible, and which is held on to the neck of the knob or handle by a screw ring or nut, or other suitable means. The knob or handle is applied by the screwing-on of the visible rose or rosette on to the supplemental or false rose, or plate; or the rose proper may be attached to the false rose by studs, or projections from the one passing into corresponding receptacles in the other.

ROOF AND OTHER LIGHTS.—R. Smith, B. Brookes, and J. Smith.

As the frames of roof lights are at present formed, when the putty used to secure the glass to the frame cracks or separates either from the glass or frame, so as to admit water, that water may fall at once on to and injure objects beneath them. The object of these improvements is to remedy this evil, and for this purpose the patentees form the bars and other parts where they support the glass with longitudinal recesses or gutters, over which the edges of the glass are laid, and the glass is then retained by putty in the usual way, or by other suitable holding means. When from any cause the putty or other holding means admits water through it, such water, after passing under the edges of the glass, in place of dropping at once therefrom, will be received into the longitudinal recesses or gutters, and by them may be conducted to suitable channels or receivers.

GLAZING HORTICULTURAL BUILDINGS, &c.—T. G. Messenger.

This invention consists in laying glass in such wise that each edge of the glass (which glass may be of any required shape or size) shall lie on one side of an open gutter, which said gutter may form a gutter only, or it may form a gutter and rafter, either castor rolled in one or two parts; the said gutter is made to carry off all the condensed vapours from the interior, as well as the rain, &c.

SASH FASTENINGS.—W. Enlar.

These improvements in sash fastenings consist in forming the ordinary lever catch (which is fastened on the upper sash) with a projection or stud, by preference of a V or diamond shape, which (when the lever is moved under the locking plate) comes in front of an arm carried by a screw-nut on a thumb-screw attached to the lower sash, so that, by turning the screw a V or other shaped recess on the arm acts on the V or other shaped stud on the lever, and thus draws and secures the two parts of the window firmly together, by which all noise from the shaking of the parts will be prevented, and such fastenings will be more secure from being unfastened from the outside than heretofore.

BRICKS.—R. O. White.

This invention is applicable when burning bricks in open clamps or kilns, where fire is mixed with the brick earth, and is also interposed in between some of the courses. For these purposes, in order that the bricks may be more uniformly burned, and come out of an open kiln or clamp of uniform quality, the system of setting the bricks in "necks," heretofore practised, is got rid of, and the bricks are set in one direction in such manner that each course of bricks breaks course with the course above and below.

TREATING STONE, BRICKS, AND OTHER SURFACES, AND THE MANUFACTURE OF FILTERS.—F. L. Ransome and E. M. Ransome.

In treating stone, bricks, and other surfaces, the patentees employ powdered glass or other vitrified or hard substance, or powdered flint, stone, or sand, mixed with soluble silicate, with or without colouring matter, the object being so to apply soluble silicate that it may for the most part be retained in combination with the pulverised substance on the surface of the material to which it is applied. The compound of soluble silicate and pulverised matter or matters having been applied to the surface of the stone, bricks, or other material, the soluble silicate is then rendered insoluble in like manner to that practised when impregnating stone or other substances with soluble silicate; but by this mode the pulverised matters will be combined with the silicate.

SOUTH KENSINGTON MUSEUM.—During the week ending 5th April, 1862, the visitors have been as follows:—On Monday, Tuesday, and Saturday, free days, open from 10 a.m. to 10 p.m., 14,344. On Wednesday, Thursday, and Friday, students' days (admission to the public 6d.), open from 10 a.m. till 5 p.m., 1,166. Total, 15,510. From the opening of the Museum, 2,592,998.

ORDNANCE SURVEY.—A return has been published by order of the House of Commons, showing the manner in which the vote of £71,000 in this year's estimates for the Ordnance Survey is to be appropriated. The completion of the survey of England will cost £20,000; of Scotland, £20,000; and the revision or re-survey of the Northern counties of Ireland, £7,500. For the engraving and publication of maps £7,100 will be expended; while "presses for copper plates" will cost another £1,000. A last notable item is the grant of £6,000 for a "military survey round London."

A NEW LATHE.—A new lathe has been recently patented by Messrs. W. Muir and Co., of the Britannia Works, Strangeways. By an ingenious adaptation of two treadles, with alternate action, as much power is obtained for turning metals as with a steam-power lathe of the same capacity. We believe that this is an entirely new feat in mechanics—to obtain, without steam, as great a result, in cases in which power is required, as is accomplished by steam. Such a lathe will be of incalculable service on board vessels, and in those colonies—as India—where steam power cannot be easily procured, but where labour is cheap. The lathe will be shown at the International Exhibition.—*Manchester Guardian.*

TENDERS.

DWELLING-HOUSES, BARNET.

For erecting a house at Barnet. Mr. George Treddit, architect. Quantities supplied.
Hill, Keddel and Robinson £4,987 Longmire and Burge £4,589
Browne and Robinson 4,694 Patrick (accepted) 4,479

CHAPEL, LANCAIRE.

For the erection of the New Congregational Chapel and School, at Lytham, Lancashire. Messrs. Poulton and Woodman, architects, Reading.

Chapel.	School.
Todd £2,834 0	£221
Bamber 2,800 0	457
Clark and Jones 2,670 0	497
Tomlinson 2,536 0	482
Catterall 2,268 10	381
Cooper and Tullis (accepted) 2,125 0	416

UNION-HOUSE WORKS, WHITECHAPEL.

For the erection of a furnace-shaft and framing flue, &c., in connexion with the boilers, at the Workhouse, in Charles-street, Mile-end New-town. Mr. G. H. Simmonds, architect.
T. Mundy £310 S. and E. Jacobs £278
Pritchard and Son 286

CHAPEL, ISLINGTON.

For erecting new Congregational chapel, Baxter-road, Islington. Mr. William Smith, architect, 12, Copthall-court, City.
Dove Brothers (accepted) £3,550

DWELLING-HOUSES, PLUMSTEAD.

For erecting and completely finishing four houses at Eglinton-road, Plumstead, Kent, for Mr. John Trodd. Mr. William Gosling, architect.
Richards £1,849 Longman £1,380
Sutton 1,780 Smith 1,263
Bemister 1,575 Bailey 1,220
Lidbetter 1,475

ALTERATIONS, &c., ENFIELD.

For additions and alterations to Ordnance Arms, Enfield Lock, Middlesex, for Mr. W. M. Creed. Mr. William Gosling, architect.
Cook £337 Goffe £269
Bentley 315

ALL SAINTS' CHURCH, CAMBRIDGE.

For the first contract in the erection of this church. Mr. G. F. Bodley, architect, London.
Kiddle £6,200 0 Rattee and Kett £5,681 10
Smith and Co. 6,000 0 Bullock and Son 5,600 0
Bell and Son 5,900 0 Thoday and Clayton 5,400 0
Quinsee and Attack 5,700 0

DWELLING-HOUSES, LEEDS.

For four dwelling-houses, in Virginia-road, Leeds, for B. Nussey, Esq. Mr. George Corson, architect.

Accepted Tenders.

Digger, Bricklayer, and Mason.—Thomas Whiteley £1,235 0 0
Carpenter and Joiner.—Nicholson and Son 720 0 0
Slater.—W. Ellis 97 0 0
Plumber and Glazier.—T. Bedford 155 0 0
Plasterer.—James Branton 155 10 0
Smith and Bellhanger.—Singleton and Tennant 70 8 6
Painter.—Wood and Son 45 0 0

For dwelling-house, Clarendon-road, Leeds, for Rev. T. Hincks. Mr. George Corson, architect.

For Digger, Bricklayer, Mason, Slater, and Plasterer's Work.

Whiteley £547 Swale and Brown £501
Bedford 527 Woolley and Sons (accepted) 465
For Carpenter and Joiner, Plumber, Glazier, and Painter.
Winn and Pawson £401 10 Thorp £372 0
Nicholson and Son 380 0 Britton (accepted) 367 1

HOUSE, SURBITON.

For alterations and additions to house, Surbiton, for John Howell, Esq. Henry Jarvis, architect.

Pugh and Wallis £707 Mndie £644
Crawley 700 Johnson and Gibby 561
Marland and Son 685 Bottom and Co. 497
Tarrant 666

SHOPS AND HOUSES, WIMBLEDON.

For the erection of four shops and houses, at Wimbledon, for J. R. Andrews, Esq. Mr. Charles R. Gribble, Putney, architect.

Patman £2,783 Nicholson £2,590
Crouch 2,765 Avis 2,365
Myers 2,746 Adamson (accepted) 2,299
Downs 2,644

STABLING, &c., WANDSWORTH.

For stabling, greenhouse, and other works, at Southfield, Wandsworth, for G. Russell, Esq. Mr. Charles R. Gribble, architect, Putney.

Avis and Sons £513 Aries £467
Adamson 490 Strong (accepted) 463

COMPETITIONS OPEN.

CEMETERY WORKS.

CHELTEMHAM.—The Burial Board for the borough of Cheltenham require plans, estimates, and general specifications, for the laying out, constructing roads and footpaths, erecting buildings on, fencing in and planting, certain lands purchased by them for a cemetery, the superficial area of which is eighteen acres. The designs must include a ground-plan, showing the sites of the different buildings required, the courses of the carriage-roads and walks, the courses, also, of the drains, the division of the land into the several sectional burial-places, and the subdivision of such places into plots for burial. The plan, also, should show the manner proposed for the ornamental planting of the land. Should the intentions of the designers as to the laying out of the land render it necessary, sections of the earthwork required, and formation of the ground surface as proposed to be made, should be provided, and such other details and suggestions as the competitors may think necessary to illustrate and make clear their designs. Plans, elevations, and sections must be provided for two chapels, dead-house, lodge, gates, and walls at entrances, &c. Specifications must accompany the plans, describing the manner of construction, the class and substance of material in the several buildings, and estimates of their several costs. Plans, specifications, and estimates of the manner of laying out and planting the site, of forming and making the roads and footpaths, and of the character and cost of fencing the site, to be also provided. Plans, &c., may be either for forming and finishing the roads and footpaths, laying out and planting the site, or for fencing the site, or for the chapels and other buildings before

mentioned, and the entrance-walls and gates, or the whole of the works, may be combined in the plans, &c., of any competitor; but the Board reserve the right of selection at their discretion from the plans, &c., submitted to them. A premium of forty guineas will be given for the best designs, specifications, and estimates for the whole of the works sent in; and a premium of twenty guineas for the second-best designs, specifications, and estimates for the whole of the works. Should designs, &c., be selected for part of the works only, a fair arrangement as to the premium will be made by the Board, with the successful competitors. The plans, &c., selected to become the property of the Board. The plans, &c., are to be distinguished by a mark or motto, and accompanying them a sealed envelope, having the same mark or motto outside, and within the name and address of the designer, and the terms on which he will superintend and supply his professional services in execution of the works. Plans and particulars of the land may be had of Mr. Henry Dangerfield, borough surveyor. The plans and other documents to be sent to G. E. Williams, clerk to the Board, Public Offices, Cheltenham, on or before the 29th May.

SCHOOLS, &c.

DURHAM.—Plans and elevations are wanted for schools and teachers' residences, in conformity with the rules of the Committee of Council on Education, at Stockton-on-Tees, Durham. The boys' school to accommodate 250; the girls' school, 200; and the infants' school, 200. Three teachers' residences. Ten pounds will be given for the most approved set of plans. Further information and tracing of site may be obtained of William Skinner, Esq., Stockton-on-Tees, to whom plans, with estimates of costs, must be sent, not later than the 30th April.

LIBRARY AND READING ROOMS.

BIRMINGHAM.—The Free Libraries' Committee of the Council of the Borough require plans, sections, specifications, and estimates for the erection of a free reference library and reading-rooms, lending-library and news-room, and gallery of art, upon the piece of vacant land adjoining the Midland Institute Building, with an elevation uniform with the said building. Intending competitors are requested to send in their plans, specifications, and estimates, under cover to Thomas Standbridge, town clerk, Town clerk's office, Temple-street, endorsed "Plans for Free Reference Library Buildings," on or before the 16th June. Particulars of the accommodation required, and of the conditions of competition, together with a lithographed plan of the site, may be obtained on application.

CHAPEL.

LEICESTER.—A premium of ten guineas is offered for the best design for a Wesleyan chapel, to be built in Leicester, capable of holding 900 persons. Architects wishing to compete may, upon application to Mr. H. Wale, 56, New-walk, Leicester, receive a plan of the site, and instructions and any other information required. The plans to be forwarded, carriage free, addressed to Mr. H. Wale, on or before the 1st May, accompanied with a sealed envelope, containing the architect's name, and bearing a motto corresponding with one to be placed on his design.

CONTRACTS OPEN.
CLUB HOUSE.

DUBLIN.—For intended alterations and additions to the 'Stephen's-green Club House' according to plans and specifications prepared by John S. Butler, Esq., architect. To be inspected at his office, No. 16, Hume-street, Dublin, up to the 23rd of April, on which day proposals are to be furnished.

ASSEMBLY ROOMS.

STAFFORDSHIRE.—For the erection of the Silverdale Assembly-rooms. Drawings, &c., at the Silverdale offices, Newcastle-under-Lyne, size of room 60 feet by 38 feet. Tenders post-paid, to the secretary, on or before the 21st April, 1862, sealed and endorsed "Tender for Assembly-room."

LUNATIC ASYLUM.

PRESTWICH.—For the erection of two blocks of buildings proposed to be added to the County Lunatic Asylum, Prestwich. Plans, &c., and other particulars obtained by applying at the offices of Charles Holt, architect, Nelson-square, Bolton, to 16th April. Sealed tenders, addressed "Tender for additions to Prestwich Asylum," to be delivered at or before nine a.m., on April the 18th, to Mr. F. C. Hulton, solicitor, Salford.

CHURCHES.

MONTGOMERYSHIRE.—For the erection of a new church at Bwlch-y-Cibau, in the parish of Meifod, Montgomeryshire. Plans, &c., on application at the schoolhouse, Bwlch-y-Cibau, six miles from the Llanymynech station, and nine miles from Welshpool. Further particulars by applying to the architect, G. G. Scott, Esq., 20, Spring-gardens, London. Tenders to be sent in on or before the 22nd April, addressed to the Rev. R. Wynne Edwards, Meifod Vicarage, Welshpool, and endorsed "Building Tender."

BERKS.—For restoring and part rebuilding the parish church of Wokingham. Berks (where there is a junction station of branches of the South Eastern and South-Western Railways). Plans, &c., at the office of Mr. W. W. Wheeler, solicitor, Wokingham, till the 13th. Sealed tenders directed to Mr. Wheeler, on or before the 29th inst.

LANCASHIRE.—For the several works to be done in the erection of St. Saviour's Church, Bacup, Lancashire, of which the foundations are just completed. Plans on application to Mr. Robert Howarth, at Stubbylee, Bacup. Tenders, either for the whole works or for the several portions, must be delivered to Edward Wyndham Tarn, architect, Huddersfield, at Stubbylee, before one p.m. on the 23rd inst.

CHAPEL.

DEVON.—For the erection of a congregational chapel at Whimble, Devon. Plans, &c., with W. F. Cross, architect, 6, Queen-street, Exeter. Tenders to be delivered on or before the 16th April.

SCHOOLS.

WHALLEY RANGE.—For all the works required in the erection of St. Margaret's schools, Whalley Range. Particulars at the office of the architect, W. Wilkinson Whitaker, 32, St. Anne-street, Manchester. The estimates to be forwarded to the architect on or before the 17th April.

NORTH-TAWTON.—For the erection of a school-house and residence, at North-tawton. Plans, &c., at the office of the secretary, Mr. Falford Vicary, at the Factory, North-tawton. Sealed tenders, endorsed "Tender for North-tawton School," to be sent to the secretary, on or before the 16th April.

PARSONAGE.

SURREY.—For the erection of a parsonage, at Thursley, Surrey. Plans, &c., on application to the Rev. H. Branner, Thursley, near Godalming, Surrey, or to Mr. J. W. Penfold, architect, 2, Charlotte-row, Mansion-house, E.C., of whom the quantities may be obtained, price 1/6s. each. Tenders (on a printed form), to be sent on or before 12th April, to the Rev. Henry Branner.

DWELLING HOUSES, &c.

IRELAND.—For the erection of a dwelling-house, near the town of Bawnboy, co. of Cavan, according to plans and specification at the office of Mr. William Doolin, building surveyor, 27, Talbot-street, Dublin (where detailed bills of quantities may be obtained) up to the 14th April, when the proposals are to be forwarded, sealed and prepaid, to Mr. William Hagg, Jun., architect, Cavan.

CHIPPING NORTON.—For alterations and very considerable additions to a residence at Chipping Norton. Plans, &c., at the offices of Messrs. Gibbs, Thompson, and Colbourn, architects, Stratford-upon-Avon, until the 23rd inst., where the quantities, &c., may be had on payment of 10s. Tenders to Messrs. Tilsley and Wilkins, Chipping Norton, on the 23rd April.

FACTORY.

NORTH WALES.—For the erection of a factory for Patent Oilworks, at Coed Talon, near Mold, North Wales. To communicate, by letter, with Messrs. Bevington and Topham, engineers, Spa-road, London, S.E.

POLICE STATION.

DEVON.—For the erection of a police station, &c., at Holsworthy, Devonshire. Plans, &c., with Henry Ford, clerk of the Peace, Castle of Exeter, and at the office of Mr. A. Coham, Clerk to Justices, Holsworthy. Sealed tenders, endorsed "Tender for Holsworthy Police Station," to be sent to Mr. Ford, on or before the 29th April.

FARM BUILDINGS.

SALOP.—For the erection of a farm-house, farm buildings, and three cottages, at Walton, near Much Wenlock, in the county of Salop, for the Right Hon. Lord Forester. Plans, &c., with Mr. Robert Griffiths, architect, Bridgnorth, until the 19th April, on which day tenders must be delivered to the architect by 12 o'clock. Persons intending to tender to send their names either to the architect, or to his lordship's agent, William Thurstfield, Esq., Barrow, near Broseley, Salop, so that a time may be appointed for viewing the site and plans.

RIVER WORKS.

CAMBRIDGE.—For the repair of the walls of Baitesbite Sluice (about three miles below Cambridge), and for supplying the same with new oak doors and floodgates for the Sluice Pen; new bridges over the floodgates and overfall, and other works. Specification with Clement Francis, Clerk of the Conservators, Cambridge. Sealed tenders to Mr. Francis, on or before the 30th inst.

ROADWORK.

CHIPPENHAM.—For the repair of the Chippenham turnpike roads, about 17 miles, for a term of years from the 1st day of June next. Specification at the office of the clerk, and copies furnished at stationer's charges. Sealed tenders, stating terms, must be delivered to the clerk, before twelve noon, on the 25th inst.

RESERVOIR.

FYLDE.—For the construction of a reservoir, upon the Grizedale Brook, about three miles from Garstang, and near Scorton Station, on the Lancaster and Preston Railway; and a reservoir near Weeton-lane Ends, about three miles from the Kirkham Station of the Preston and Wyre Railway, for the Fylde Waterworks Company. Plans, &c., and all information obtained at the office of Mr. T. B. Foster, C.E., 23, John Dalton-street, Manchester, from whom specifications and forms of tender can be obtained on payment of 10s. for each reservoir. Tenders must be sent in to Mr. T. A. Wilkinson, the secretary of the Company, at the Fylde Waterworks Office, Kirkham, not later than the 28th inst. The reservoirs will be let in separate contracts.

GASHOLDER.

TODMORDEN.—For certain works required in the extension of the works of the Todmorden Gas Company (Limited), consisting of a stone gasholder tank and bur wall. Plans, &c., on application to the Manager, to whom sealed tenders are to be sent on or before the 17th April, endorsed "Tender for Gasholder Tank."

RAILWAY WORKS.

LEYEN AND EAST OF PIPE RAILWAY.—For the construction of the extension of the East of Pipe Railway, from the Kilonquhar Station to the town of Anstruther, either as a whole or in the following sections:—1. The Elie Contract, extending from the commencement of the extension near Kilonquhar Station to a point near Ardross Farm-house, and to about 4,325 yards in length. 2. The St. Monn's Contract, extending from the termination of Contract No. 1 to a point near the west boundary of the parish of Pittenweem, and to about 3,109 yards in length. 3. The Pittenweem Contract, extending from the point where Contract No. 2 terminates, to a point near the milestone at the west end of Anstruther-Wester, and to about 3,750 yards in length. The rails, chairs, sleepers, keys, and spikes will be furnished by the Company. Plans, &c., with the Secretary of the Company, at Leven, and the line is duly marked and staked out for inspection. Sealed tenders, either for the whole work or for one or more of the separate sections, distinguished by a marking on the envelope, must be lodged with the Secretary of the Company on or before 16th April.

CALEDONIAN RAILWAY.—For the construction of the Stonehouse Branch, about 4 miles 38 chains in length. Plans, &c., at the office, in Glasgow, of Mr. George Graham, the Company's engineer, where duplicate schedules and blank forms of tender may be had, price one guinea. An assistant engineer will attend at Stonehouse, on Friday, the 11th, at 12 o'clock, to accompany intending offerers over the line. Sealed tenders, addressed to the secretary, at Glasgow, must be lodged with him on or before 28th April.

DARLINGTON.—For the erection of a cast-iron portico at Darlington Station, on the North Eastern Railway. Plans, &c., and further information, on application to Mr. Prosser, architect, Newcastle. Sealed tenders, marked "Tender for Darlington Station," to be sent in to the Secretary not later than the 23rd inst.

FERRYHILL.—For the erection of sheds over the platforms, &c., at Ferryhill Station, on the North Eastern Railway. Plans, &c., and further information, on application to Mr. Prosser, architect, Newcastle. Sealed tenders, marked "Tender for Ferryhill Station," to be sent in to the Secretary, not later than the 23rd inst.

EXETER.—For the erection of a roof for the new station at Exeter, of the Bristol and Exeter Railway, having an area of about 500 squares. Drawings, &c., at the Engineer's Office, Bristol Terminus, to the 5th of May. Sealed tenders to be addressed to the Secretary, A. Moore, Esq., on or before the 6th May.

CAISSON.

FALMOUTH.—For the construction and delivery of a wrought-iron Caisson, for No. 2, Graving dock, Falmouth. Drawings, &c., at the offices of the Docks Company, at Falmouth, or of James Abernethy, Esq., M.I.C.E., 3, Parliament-street, Westminster. A printed form of tender will be supplied, which must be filled in and delivered at the offices of the Company, on or before the 18th April.

MILITARY WORKS.

YORK.—For building a provost establishment at York Cavalry Barracks. Parties desiring to tender must leave their names at the Royal Engineer Office, York, on or before the 15th April, and pay half-a-guinea for bills of quantities.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications. Works in Progress.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

W. G.—Publication of letter would do no good; the question is already decided.

B. L. (Worcester).—Slabs of enamelled slate would probably answer best; glazed tiles would answer for a time, but in the case named they would probably require occasional repair.

O. S. (Stamford).—See another page.

AN ARCHITECT AND SUBSCRIBER.—An exceptional and doubtful case, in which we cannot interfere.

C. E.—See notice on another page.

G. AND C. H. (Stratford-upon-Avon).—Ditto.

R. B. (Worcester).—We shall be glad to see anything you may send us.

K.—We must always decline such proposals.

G. H. R. T.—Shall appear.

AN EXHIBITOR.—Send name and address.

MR. SKIDMOORE'S LECTURE ON METAL WORK.—In answer to several correspondents, the lecture will be given in our columns as soon as the illustrations can be prepared; this will necessarily take a week or two.

F. K. M.—Thanks: shall be engraved.

B.—Next week.

A SUBSCRIBER FROM NUMBER ONE.—All in good time.

A CONTRACTOR.—Undoubtedly you have your remedy.

Q. H.—Yes, if suitable. We cannot name the writers of articles which appear in our pages.

F. M.—Declined, with thanks.

W. R. O. M.—Shall hear from us.

A. (Bath).—Deferred for want of space.

* * * All communications to be addressed, The Editor of THE BUILDING NEWS, 20, Old Boswell-court, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 15 to 21, Old Boswell-court. Advertisements are received up to six o'clock on Thursdays.

THE CHAMBERS' SUPPLEMENT.

Those Subscribers who have not yet received the completion of the above will receive them in few days.

ART EXHIBITIONS.



THE present is an age of many novelties, and among its many remarkable characteristics we must certainly include exhibitions. We are familiar with the display of articles of all descriptions, natural and artificial, in markets and shops for sale. We can also carry back to early times the custom of collecting in one spot articles of luxury and beauty, with the object of adding lustre to some imperial court or some sacred shrine. We have, too, for long been accustomed to the formation of permanent museums and collections, where natural, scientific, or antiquarian curiosities may be preserved as objects of study and interest; and we can carry back to remote days the establishment, for similar purposes, of public libraries and reading-rooms. Our modern exhibitions differ, however, from all these. They present a marked contrast to all museums, galleries, churches, palaces, and collections, because they are temporary (such as, for instance, the great fairs of the middle ages), by not being solely—in some cases not chiefly—established for the sale and purchase of articles exhibited; and in this and some other respects they are also markedly distinct from shops, bazaars, and exchanges.

The exhibition is, then, an institution of the nineteenth century, and as such interesting, as illustrating some of the characteristic peculiarities of the age in which we live. Let us examine a little into the nature of some of the sorts of exhibition now familiar to us.

The earliest, and the most important, exhibition to which we shall have occasion to refer, is the annual exhibition of the Royal Academy, the forerunner of many other annual exhibitions of painting and sculpture. This has always been and still is a temporary collection of works of art assembled together for the purpose of exhibition during a few months of the year, and then again dispersed. This exhibition has undoubtedly served very largely as a medium for the sale and purchase of pictures, but neither the artists nor the public have supported it solely, or even chiefly, on that account.

To the artist the exhibition is valuable as a means of bringing his works before the public, of gaining reputation, and in some cases—especially in the instance of men of rare genius and a noble temper—as a precious opportunity for showing or doing something noble or great, and for touching the hearts of spectators by some painted poem or sculptured story which, urged by the natural eloquence and earnestness welling up within him, the ardent enthusiast cannot but proclaim, and for which he longs to get hearers. Of the spectators, not one in a hundred comes to buy or does buy; the intention is to see and to admire, and to be pleased, or to criticise and play the judge of art. And if there are here and there artists high-souled enough to paint, not so much in order to win money as because they must pour out the overflowings of their rich genius and endless fancy, and cannot forbear, we believe that many of those who most value those annual exhibitions of works of art, among which the Academy is the earliest founded and the most distinguished, do so because of the opportunities thus offered of being elevated, charmed, or touched by the poetry that they can find in the works of the artists with whom they have special sympathy.

To bring the painter and his audience together is, then, the object of the modern system of exhibitions; out of this audience, one here and there may buy, but the many will only admire; and it is as much on account of the many, as of the one or two, that the arrangement was made and is kept up.

The printing-press has been the chief means of bringing the author and the poet into contact with their audience; but the dramatist and the musician have always had to display their works, or cause them to be displayed, by recitation or performance before their audience; and it is to provide something of this sort for painting that art exhibitions have been originated.

It may be asked, however, why is it that in the Middle and Renaissance Ages, when artists flourished, greater far than ours, and when cities like Rome, Florence, and Venice contained crowds great enough to furnish such exhibitions with guests, no such exhibitions arose? The reply is twofold. First, the great and intellectual judges of art were probably then confined to an infinitely narrower range than at present, so that the wealthy, the educated, and the men of leisure could be seen in their own houses, or could see works of art in the studio of the artists themselves, and they having seen them, the artist's critical audience and those from whom his remuneration flowed were secure. Second, and chiefly, as far as related to painting for the people, or carving for them, or teaching them with the brush and the chisel, the artist of those days had an infinitely better channel of doing it open to him than our modernism, with all its improved civilisation, can afford. When all the greatest works of art were executed in the service of religion, and were painted on the very walls of the church, or graven in its very fabric, what need, or what possibility, was there of any better mode of letting the picture tell its tale than painting it where,

from day to day, it was to be regarded with sentiments of awe and wonder something akin to worship, and was, amid the sacred objects of the sanctuary, to take its place as one of the appointed means of impression, instruction, or comfort?

The few artists of our own day and country who have the opportunity of painting such pictures as the Early Church pictures were, and of having such an audience as this, show, by their carelessness about exhibiting elsewhere, how much the value of ordinary exhibitions is superseded, in their eyes, by the special opportunities they elsewhere enjoy. If we miss Cope, Herbert, Dyce, and some others from the Academy walls, it is because they paint pictures that will hang in a more congenial situation than any they could there find.

There is one very large class of pictures, and an essentially modern class, which would of themselves alone suffice to maintain our exhibitions, even if all our historical painters were away. Landscape-painting is eminently the growth of modern Europe, and can never become the appropriate decoration either of churches or public buildings. Such poetical landscape-painters as Turner, Danby, Creswick, David Cox, and others, have established a magnificent school, which will always furnish works for which their producers will desire, not merely opulent purchasers, but many spectators, and the great advances landscape-painting has made has been one of the main causes which have contributed to foster the growth of our annual exhibitions of pictures.

Within our own day we have witnessed the establishment of the system of local, provincial, national, and international exhibitions of arts, manufactures, and fine arts. To an historian these will be significant marks of the wealth and intelligence of Europe, of the earnest desire of all classes for comprehensive information, and of the strong conviction on the part of the producing classes and of Governments that publicity and good fame is all important for the well-being of manufacturers and manufacturing states.

At this moment private individuals and foreign Governments are spending sums which, in the aggregate, will amount to many hundreds of thousands, and are depositing articles, the value of which will amount to many millions, in order to promote an International Exhibition of the most comprehensive nature; and within the next few months vast sums of money, and an amount of valuable time which, if aggregated, would seem incredible, will be devoted by individuals of all classes to the appreciation of this vast collection. Nothing is more remarkable than the purely voluntary nature of the whole. Of course, many individuals may here and there say with truth, that they are exhibitors or spectators not voluntarily, but because they could not help it; but the real pressure upon them, whatever particular form it may take, is really a pressure of public opinion; and were not the whole mass of civilised humanity voluntarily inclined towards such undertakings, no power could by any possibility, or with any amount of force, accomplish the tenth part of what is now being cheerfully and eagerly done by volunteers, or could approach to it.

It is not now our intention here to attempt to consider this very interesting subject of national exhibitions of arts, manufactures, and industry in all its bearings, or, in fact, to notice more than one solitary peculiarity which it presents, and which has to do with our subject.

From the scheme of the International Exhibition of 1851 the *fine arts* were excluded. This glaring mistake was far less palpable than it might have been, owing to the happy accidents that very many of the objects of industrial art exhibited were of a high class of artistic design, and that many works of fine art, particularly of sculpture, obtained admission by various side doors. Had this not been the case, and had not the interest and novelty of the undertaking been such as they were, we doubt that the absence of such a department as was supplied at Paris in 1855, and is to exist at Kensington, would have been felt as a great defect. Felt or not, it was a defect, and the fact of its being the principal addition to the scheme of the previous one is a significant collateral proof of our statement, that exhibitions of fine arts are an essential feature of the present day, and will probably continue so for long to come.

We may be thought to be passing from one extreme to another if we pass from the great collection at South Kensington, including as it will a comprehensive series of architectural designs, to the modest dimensions and claims of the Gallery in Conduit-street. The Architectural Exhibition has, however, very peculiar claims both upon architects and others, and we cannot more appropriately bring these observations to a close than by showing how well it deserves support.

The works of the architect are, it is true, usually such as when completed are either wholly or partly open to public observation; but the positions where they stand are quite beyond his own control, and many really fine works are so placed that unless they are known of and sought for few of the educated public would even see them. While it is only by a laborious and careful study of many works that either an architect or an ordinary spectator can, without an exhibition, form a correct idea of the general course of the art from year to year. Now, this opportunity the Architectural Exhibition is established to give, and does give, and if now the number of visitors be but moderate, we may safely answer that it is *only* because the number of exhibited works is small also. Let every executed work of importance or remarkable design find a place there, and every amateur whose opinion is of any value will come to look at them.

The great stumbling-block is the necessity, as it is supposed, of making up showy, and consequently expensive, perspective drawings of any architectural object to be exhibited.

This necessity does not exist; it is quite true that spectators enjoy a

perspective view in preference to hard and crude geometrical drawings, and it is equally true that a faithful perspective shows the solid effect of a building extremely well; but where no other object except that of making an exhibition drawing has rendered the setting up a perspective desirable, we apprehend that a well-finished series of geometrical drawings, especially with a little aerial perspective introduced in the tinting, will answer every purpose; and for this object good working drawings, or careful tracings from them, would often suffice.

At any rate, we must urge it strongly upon the attention of architects that as the Exhibition of Architecture has, perhaps fortunately, seemed to detach itself from the Royal Academy, and from other exhibitions, it is their duty, and will be their greatest wisdom, to raise it to the rank of one of the leading annual collections, both in extent, importance, and popularity. We do not urge that heavy expense should be incurred in the preparation of special drawings or photographs, but we urge architects to take care that the drawings by which they make clear their designs to their clients and their artificers should be such as will also make them clear to the general public and to architectural spectators, and then to exhibit them; and in sanction of such a course we may remind our readers that the recent award of the Society for the Promotion of the Fine Arts, of a medal for the best exhibited architectural design of the past year, was obtained by Mr. Blomfield, for a church not drawn in perspective at all, nor even drawn at all, but merely shown by a frame of careful mounted tracings, taken from the working drawings.

THE ALBERT MEMORIAL.

THE subscriptions for the memorial to the late Prince Consort are getting less and less in amount as Time—the great consoler—renews its healing balm to the sharp wound which the nation so suddenly endured. They now, together, approach £50,000. Beyond that sum we are hardly justified in hoping that they will advance. This fact has called forth complaints from some of the Committee at the lack of public appreciation of the Prince's services, and suggestions from others for infusing new life into the movement, and for directing it into a different course. It is said that appeals have hitherto been made only to the higher and wealthier classes; that an examination of the subscription list shows many rich men's hundreds but few poor men's pence. We are reminded that the good Prince's labours and talents were daily devoted to the amelioration of the sufferings of the poor, and that little gratitude has burst forth to mark where the seed was scattered. There is some truth in this statement, but not the whole truth. We do not care to analyse the subscription list, and to nail up the absentees. Every man has an equal right to withhold and to give what he believes he can afford. If we were, however, to hunt through the pamphlet which the Lord Mayor has so extensively circulated, we should be able to sustain an opposite conclusion to that put forth. A comparison of the list with the Court Guide would show that the one is not a mere reprint of the other, with valuable appended figures, and that their relative thicknesses is as a scrap of gold leaf to a guinea. Every inhabitant of London whose name is printed in that choice volume, has once or twice been startled with a dignified announcement from a special messenger that the letter presented was "from the Lord Mayor." Daily advertisements in the *Times*, and periodical voluntary notices in every other newspaper, chronicle the progress of the subscriptions, even as they previously announced the intention of forming a fund, and the object to which it is eventually to be devoted. No person can possibly be ignorant that a committee sits, and that the list is enclosed. The amount yet received is not so large as was expected, more especially by those gentlemen who started at the same time such gigantic propositions for absorbing it. A feeling of disappointment certainly pervades society at the result; but the fault, we believe, is less with the public than with those who made some little capital out of the concern by creating extravagant expectations, and put forth preposterous assertions of what it would and ought to be. No one can justly accuse the nation of being insensible to the appeal made to it.

The circumstance of the Hartley Colliery accident intervened, and no doubt diverted some portion of the spare cash which would otherwise have been given to the Prince Consort's Memorial; but although the circumstance is to be regretted, the result of it cannot be. The need of those widows and orphans was pressing. With the wail of the bereaved was blended an appeal for bread. The mourning there was in desolate cottages, and the tears fell from eyes which knew not where else to look for succour than to their sympathising fellow creatures. The grief at England's and England's Queen's loss was deeper and more solemn, but it was less acute. The need for sacrifice was not urgent in the latter as in the former case; it would have spoken trumpet-tongued for our loyalty, but for no other sentiment if the cause of the Northumberland widows had been sacrificed to the wish for a monolith in Hyde-park. But when the sum of £50,000 is called unworthy of us as a nation, it is well to inquire what has been raised to provide memorials for other great men whose deeds illumine the annals of our country. Let what public monuments we have of Nelson, "the nation's darling," of Wellington, the "saviour of the world," of Shakspeare, Milton, Bacon, or of the Prince Consort's great prototype, the "blameless" Alfred, be the answer. It cannot be unworthy of a nation to do more for the perpetuation of the late Prince Consort's memory than it has done for either of these; and when it is charged against the working and labouring classes that they have done little or nothing to show their appreciation of his worth, it should be remembered, in extenuation of their neglect, that it was not in the Prince's nature to court that popularity which adulators would attach to him. His was the nobler mission to do good for its own sake, to obey the instincts of a lofty refined mind and of a

warm sensitive heart, conscious, perhaps, that the less educated people for whom he worked would not do him full justice; contented, it may be, if he won, as he did win, their respect and esteem, and if he overcame, as he really did, their prejudices against him. No great man indeed was ever prized at his full worth in his own time. To measure his goodness one needed to have scaled the same lofty height; to have fully appreciated him we must have more resembled him than we have done. Whenever, in future ages, a pigmy struts where once this giant marched, we may indeed turn back to our history and dwell lovingly upon the bright page which records his services. Then, perchance, the humblest amongst us may compass his value.

In the case of the Hartley Colliery accident a chord was struck in every beating heart in England. It was the same with the public contribution for the widows and orphans of the Crimean soldiers. All classes could understand those objects. They required no great intellectual qualities for their comprehension. They seemed personal to every one. All classes did not, on the contrary, understand the late Prince Consort. It is no disparagement either to him or them to state the fact. Many again who were capable of estimating the value of his services had objections, which we have a right to respect, to the proposed form of the memorial. The lukewarmness of many was chilled when the freezing news came forth that the obelisk was to be monolithic, and that more money than had been at that time subscribed would be spent upon machinery to raise, instead of upon art to embellish, it. The decision of the Queen in favour of an obelisk was asserted, by some too-influential people, to mean a monolithic obelisk. We at the time pointed out the folly of appropriating so large a sum as would be required for transport for the attainment of so small an idea. In face of the slackening tributes to the fund, the absorption of all local funds was suggested, but with the result which all must have anticipated, except those who gave rise to it. Not a penny we believe has been gathered thence. The folly of the monolithic proposition was followed by these invitations to local committees to sacrifice their little collection upon the metropolitan Mutt-fetched block, and by complaints at the stinginess of the middle and working classes.

Running in the same narrow groove comes a suggestion that the begging-box and the begging-list should be distributed broadcast over the land. Collection cards are, it is proposed, to be issued to the members of the Committee and their friends, to the societies in connection with the Society of Arts, to railway companies and bankers, to large manufacturers, to the heads of Government offices, and to ladies' committees. Appeals for voluntary contributions having failed to satisfy the sanguine, the screw is to be put on by an appeal to our vanity. Our unwillingness to refuse compliance with the request of some one in authority, whether master or middle-aged spinster, is to be tested. We thought this practice was devoted exclusively to missionary enterprise. We have all, perhaps, once, or oftener, in our lifetimes stumbled unintentionally into a family where mamma and Miss Jane devoutly employ their powers of persuasion on behalf of pet infidels, and where even a toddling child, who does not know its letters, rattles its box and begs for "sixpence to convert Timpnttew." It is our own fault if we again cross the path of these merciless highway-women. We have even known boys at school filched of their pocket-money, under similar pressure, to buy breeches for a tattooed foundling in some unheard of region. A wandering missionary told them the tale of his discovery, and proposed two weeks' contribution from every boy. The inference which might be drawn from the lads' refusals forced them to a sacrifice which, voluntarily, they would not have made, which ought not to have been placed before them, and for which the shrewd proposer was patted on the head by the missionary as a "pattern boy."

Now, this is precisely the result of these "collecting cards," but, instead of its being confined to an occasional house which a man may now avoid, it is to be forced upon us from all points of the compass. It is a small-meshed net which no fish can escape, and out of such materials the "voluntary" tribute of a nation's gratitude is to be reared. Money, thus raised, might fitly be squandered upon the transport of a huge stone; it would be degrading to the Prince's memory to adorn his monument with it. It is now, however, rumoured that the unsoundness of the Mutt block will necessitate an abandonment of the monolithic idea. We really hope such will be the case. Let us have an obelisk, since her Majesty wishes it, but let it be an artistic one, proportionate to the disposable fund. We want to hear no more about the backwardness of the working or any other class, and to see no begging cards; we only hope that the best man or men to execute the work will not be kept back, and that we shall see an ornament to the Park instead of a huge curiosity. If the artistic class are consulted, it will be found, we believe, that even with an outlay of £50,000 we can possess a monument far superior to anything which has yet been reared to the honour of England's worthies, and consequently not unworthy of him whose memory dwells with them in our hearts.

CITY IMPROVEMENTS.—The General Purposes Committee have reported to the City Sewers Commission that they have arranged with the parish authorities of Allhallows, Barking, to carry out the improvement by widening Barking-alley round the churchyard, and also that they had negotiated, through the solicitor and surveyor, in respect to the proposed improvement in Paternoster-row and London-house-yard, and expected that they would be enabled to report to the court that the whole of the arrangements for opening the court from Paternoster-row to St. Paul's-churchyard had been satisfactorily completed. Mr. Pearson, the City Solicitor, subsequently reported that the arrangements had been completed.

ARCHITECTURAL EXHIBITION.

THE show of Ecclesiastical designs at the Architectural Exhibition is, we should think, equal in point of numbers to what it has been on former occasions; but here its equality ends. One would imagine, from an inspection of the fifty or sixty designs in the Gallery, that the study of Gothic art had not only been checked but had actually retrograded to the starved, hard features of twenty years ago. There is none of that art to be seen which was carried nobly to the front at Lille and Hamburg, which confidently entered the lists against all comers at Westminster Hall, and triumphantly issued thence. By the Architectural Exhibitions of former years we have been able to measure the growth of architecture. It would appear that a blight has this year fallen upon the profession. Messrs. Burges, Clutton, Deane and Woodward, Seddon, Gilbert Scott, Norman, Shaw, Nesfield, and others, who have heretofore made the walls sparkle with vigorous and healthy Gothic art, leave the work now to feeble hands. The Classic men are equally neglectful or indifferent. Messrs. Coe, Garling, Allom, E. M. Barry, Owen Jones, and Digby Wyatt, are names looked for in vain in the present catalogue. We say nothing of the greater dignitaries of the profession. We should be as surprised to see them in Conduit-street as we should to see princes mingling promiscuously amongst a crowd of working men; but we had a right to expect more than the "one halfpenny worth of bread to such an intolerable deal of sack" as is here provided for us. The church designs seem to have been prepared entirely after the old-fashioned prescriptions. A certain proportion of crockets, pinnacles, traceried windows, pointed arches, buttresses, gables, and broche-spires are shifted and put together with scarcely more art than is displayed by children with their geometrical toys. The studies of existing buildings, with one striking exception, are also unequal to those of former years. Mr. Vaughan sends, as usual, a collection of sketches. They are highly finished, but there is a want of vigour about them, and they occasionally, we fancy, betray the peculiar distortion of the camera lucida. Mr. Beazley's sketches in France and Italy are splendid specimens of pencil work, as well as of architecture. They are firmly drawn, unfinished, but sufficiently so to enable us to realise the grandeur of the different subjects. The points of view are, moreover, admirably chosen.

The design submitted in competition for Rashcliffe Church by Mr. Sorby is spoilt by the chimney from the vestry, which runs up beside the tower. It is bad enough in form alone, but it would be even worse when emitting smoke. The buttress-shaped tower appears weak in its upper story.

A very bad photograph of Mr. Street's tomb to Major Hodson, in Lichfield Cathedral, is exhibited by Mr. Earp. It neither does justice to the design nor to the execution of it.

The Chateau of Chambord, so frequently sketched, is still attractive to every one who can use a pencil. Mr. P'Anson shows a fine portion of it, but it is drawn in parts out of perspective. His tinted sketches of the Castle of Runkel, in Nassau, have the same merit of well-selected subjects which distinguishes that at Chambord.

The font to be executed in St. Matthew's Church, Bethnal-green, has well cut figures on its four sides, but the architecture to which they are attached is unworthy of them.

Mr. Hayward's chapel roof is a good specimen of the old hammer-beamed Perpendicular roof. The principals rest on columns and corbels; bands of decoration run between them and at the end, which would doubtless cost some money, and are of no value, being too weak in their lines and out of all character with the simple dignity of the roof.

We have already alluded to the tasteless design of Messrs. Green and De Ville for the Unitarian Chapel at Hampstead. In it the architects have evidently been forced into an uncongenial style. It seems really foreign to them. They give us about the same idea of Italian Gothic as a boarding school Miss affords us of the French language. Educated to portray the "bold Roman manner," their hands seem cramped, and they stumble at the work which other men, differently disciplined, perform with ease.

Mr. Lamb sends a very instructive series of designs. His first design for the City of London Consumption Hospital has those broad masses of wall-surface which architects are generally so chary of giving us. The main window is deeply recessed, and obtains value from the broad shadows which it is capable of holding. Very clever also in its arrangement is the east end of St. Andrew's Church, at Aldwerk, and the little porch which forms one of his studies for proposed churches in the frame numbered 39.

The photographs of the St. Patrick's Cemetery, Low Leyton, Essex, by Messrs. Wilson and Nicholl, show some brick buildings with stone dressings, vastly superior to anything which unlimited competition procures for Protestant cemeteries. Economy has evidently been insisted upon, but Messrs. Wilson and Nicholl's art shines brightly through it. In fact, as some plants grow best in poor soils, so we think these gentlemen are more successful in treating simple buildings than they are in the more costly work visible in their drawings of the high altars in the churches of St. Charles Borromeo, Upper Ogle-street, and of the Augustin Friars at Limerick (59), not but that the true Gothic spirit is seen in all alike. They are only inferior when compared with the same architects' work. The third sketch of altars has a heavy cumbersome support, which seems only necessary to support a pinnacle, which is a blot upon the design. In the cemetery the piercings of the stone for the lights are capitally managed.

Mr. Truett sends a sketch of the plainest of churches. It is evidently whitewashed, and has not a moulding or cusp upon it. It has no buttresses,

tower, turret, or other of the paraphernalia of the modern Gothic school, and yet we should be sorry to see it restored. It looks what it is—an unpretending village church, well suited for the countryfolk of Blakemere. It is, however, only a fraction of Mr. Truett's drawing, which consists chiefly of a huge poplar tree and a broad expanse of gaily-planted flower beds.

Mr. Manning's chapel, at Hampton, is well proportioned, and in good taste. It has rather too large a display of colours in the material. Mr. McI. North's design has been judiciously hung beside it as a foil to set it off.

The interior of Speen Church, near Newbury, is weak in design, as well as in representation. Pointed arches, round columns, an open roof, and chamfered bench ends, are therein put together in the ordinary stereotyped manner.

From similar threadbare features of church architecture Messrs. Francis have composed the closely resembling churches of St. Stephen's, Westbourne-park, and St. Mary's, Kilburn (57). Mr. Coe's St. Philip's Church, Kennington-road, exhibited by the colourist, Mr. Beetholme, and dozens of others which hang upon the walls, have the same family likeness. Passing the highly finished drawing of St. Asaph's Choir (62), we come upon a poor representation of St. Alban's Abbey, by Mr. Julian, and a fine drawing of a sculptured trefoil, by Mr. Edmonston. A couple of good subjects have been (in 68) inadequately treated by Mr. Baxter, and the back of Mr. Leonard's frame would have been as ornamental as the drawing in it.

"Imitation," it is said, is the homage which vice pays to virtue, and the saying receives confirmation in Mr. Phipps' design for a church, (73). He has boldly taken the one step from the sublime to the ridiculous. He fancies, apparently, that Mr. Street's talent lies solely in his rapid etching, and has, consequently, taken great pains to produce simply a coarse drawing. He has borrowed the lovely spire-lights from Mr. Street's church of St. Giles, Oxford, but they fail to enrich the design.

It is painful to see in Mr. Burnet's design for a family memorial (78) how money may be wasted. There are all the materials for a work of art, except only the knowledge of a master in employing them. We would prefer a mason's headstone to such a memorial as this represents.

Mr. Shoubridge's two oil paintings of views in Florence show only how the Committee have been obliged, in their disappointment in those invited, to go out into the highways and by-ways to compel folks to come in and partake of publicity. The drawing of St. Mary's, Greenock, by Mr. Goldie, is, we believe, one which we saw here two years ago. His studies for portions of the interior of Arundel Castle are likewise, we think, no strangers to us. They are, however, excellently designed in parts, and we are not sorry to have another opportunity of examining them.

Mr. Drayton Wyatt's lithograph of Mr. Scott's design for the proposed interior of King's College Chapel, makes us wish to see the enlarged drawing from which it was taken. It appears to be in that style which Mr. Scott has so successfully used at St. Michael's, Cornhill. The roof has semicircular ribs resting on columns and corbels, is open to the rafters, and has panels between them filled with coloured ornament. The walls are diapered, and coupled columns support the arches which divide the nave from the aisles.

Mr. Hayward's design for the Congregational church and schools at Plymouth, are not equal to that of his smaller works. The idea is good, especially of the schools, and a vein of original thought pervades it, but it wants a considerable amount of reconsideration and study.

136 is another design in which Mr. Street's spire-lights at St. Giles's have been introduced. One good point in this design is the avoidance of meaningless and useless buttresses.

Mr. Wimple's designs for cemetery chapel are designed upon a business-like principle to suit the limited intelligence of a local board. The money to be expended is divided equally between the two chapels, to secure the interest of the dissenters. Even a turret is given to the dissenters' chapel. It is a very good plan to work upon when the main object is to be successful in the competition.

173 was likewise submitted in competition for the Plymouth Congregational Church. With one-half the amount of work it might possibly look twice as well.

There are some good pictures in the dissenters' chapels of the Welford and Ipswich cemeteries, designed and carried out by Mr. Henry E. Cooper. Mr. Robins exhibits a photograph of the Croydon Cemetery chapels, of which we saw drawings some years ago. Mr. Seddon, although he exhibits no design, contributes two or three masterly sketches of some good stained glass. That from Rheims Cathedral is particularly fine. It is quite refreshing to see a Greek monument built now a days. Mr. Edward Richardson has designed one tastefully (208), and although it contains no great amount of originality, it has as much of that quality as three parts of the designs by the Gothic men, who will, as a matter of course, condemn it utterly. The Union Chapel at Highbury must have been a shocking eye-sore if it has been improved by the alteration exhibited in Messrs. Bedell and Lander's drawing (209).

Mr. Croft has put a new roof to the parish church of Shuckburgh (211), without destroying its character,—no trifling accomplishment in these days. It is one of the first parish churches which we have seen which has not been actually ruined by so-called restoration. The design of the pulpit at St. Matthew, Bethnal-green, is far more successful than that of the font which we have before mentioned (226). "The octagon stage of All Saints' Church tower, Kensington-park," is one of the best and most useful drawings in the Exhibition. It is drawn to a half-inch scale, and clearly

shows the design. A small sketch of the whole tower might advantageously have been appended to it.

Mr. James Fowler's "chancel of Wathe Church, Lincolnshire," is a very clever caricature of the recently built highly ornamented churches. The profusion of colour, tiles, stained glass, brick walls, and marble columns, are parodied very amusingly. The joke would, however, have been more forcible if the drawing had been better executed. The notion of showing the vaulting between the ribs left open to the blue sky is very quaint.

Mr. Joseph Clarke exhibits a fine interior of Point-de-Galle Church, Ceylon, with a novel and effective roof. Close beside it hangs the interior of Mr. Knightley's St. Matthew's, Bethnal-green. We should like to know why the hanging committee could not have hung the three drawings of this building together, instead of dispersing them promiscuously about the room.

Upon the screen there are some fine measured drawings; Mr. Willson's Lincoln Minster stalls, and Mr. Carzon's roof of the Geston Hall, Worcester, are particularly worth examination; and amongst the Class of Design sketches of the Architectural Association there are some very promising sketches by both Mr. Tarver and Mr. Adams.

MR. FRITH'S PICTURE.—THE RAILWAY STATION.*

THE scene of Mr. Frith's picture is the Paddington Railway Station, with its aisles, seen one from the other in many vistas and cross-views; a train drawn up to the departure platform; its engine evolving a faint smoke out of that deep throat of hasty breath, and a thirsty burning hiss blowing with a shrill breath of steam noisily from the whistle. On the top of the train are urgent porters taking up trunks by dozens, and drawing over them the tarpaulin covers. On the platform more urgent porters drive through assembled crowds with "By leave! by leave!" and do the best they can with mountains of luggage, sadly plagued by fussy ladies, whose sole earthly anxiety is for the inevitable straw-plait basket, containing the refreshments for the journey, of course, which, as their luck has it, they insist on having deposited in the guard's van. A Himalaya on wheels goes past the front in this predicament—a woman in rusty black exhorting a wondrously patient porter. In the background are volunteers, armed and hasty for drill. Hastens through the crowd a ruddy old gentleman, with a eased rod in his hand, a string of flies round his hat, bound for Shepperton or Maidenhead and a day's fishing. Next are hatted and feathered girls, their hair in nets of strange device, and bonneted older ladies rushing about with feminine impetuosity. News-boys bawl, and people hurrying, defiant of regulations and order, through imperturbable porters and guards, conscious of duty and office. There is a group of sailors bound for Bristol and the sea; a feeble father bound for a longer journey, guided through the crowd by his daughter, dutiful but rather hard, and somewhat heedless of the details of her office. At the side of the picture an old lady is seen who has been bent on smuggling a dog into the carriage with her, and defrauding the company of a fare for the same. She is apologetically angry to the porter who has found her out, and perhaps half-ashamed of herself; not so her daughter standing behind, a black-eyed impertinent girl in a hat, who seems to resent the man's civil remark to her mother, "I can't let him pass, m—m; it's contrary to orders." Next to these a keeper couples two setters, one of whom squats on his haunches looking at the man; the other, bright-eyed, stares away with erected ears, eager to recognise some coming master in the crowd. Next a showy, vulgar woman, in a red shawl flares along, dragging a little girl with one hand, while with the other she strives to arrange that inevitably disarranged bonnet of dirty white, that will come off her coarse ringlets and show her tawdry charms. The little girl, upon whose costume much fewer pains have been expended, trips along with a basket of food for the day. To the virago follows her meek husband, leading their male offspring, a boy prettily dressed in knickerbockers, and busily engaged with a caged bird he carries, may be to give it a little fresh air on the excursion the party evidently meditates—a kindly thought enough.

Next to these are the porter, pushing his truck, and the fussy woman. Keeping behind the main incidents, we come upon a stalwart sailor parting from his red-eyed wife, his hand kindly upon her shoulder while he caresses their child, it may be for the last time, and heedless, for the moment, of his comrades, who call him to their seats. Stooping out of a second-class carriage a brother kisses his sister in farewell: she is a bright blonde; while in the next compartment a daintily-dressed damsel mounts alone. A young naval officer, with his newly-made wife on his arm, rather impatiently awaits her parting from her mother, she tearfully bright the while. A recruiting-sergeant tosses up a bouncing boy a nurse has brought to say good-bye. This man is duly oiled and elaborately curled, and set out in shabby officer's coat. Near him two honest country fellows, recruits, who have been brought up to be attested, or just picked up about the London markets, examine their tickets and consult the incurious under-guard about the why and the wherefore. These are clean-limbed and healthy-looking men, who have taken her Majesty's shilling and mean to earn it. Not so the ugly gallows-bird who has likewise enlisted—wasted town sot, who, not repentant of his debauch, sucks in his feverish, cracked lips a favourite stick, and raps his yellow teeth with it, staring out of his hateful bleared eyes, while the white-haired mother, her face hidden in a widow's cap, leans her forehead upon his shoulder and sobs, as she shall sob alone.

Immediately in the centre of the composition stands a bilious Frenchman, yellow from gorging those hot breakfasts of his, and the interminable cigars that follow them; he is fur-clad, bearded like a seedy "pard," ringed on the finger, holding an open porte-monnaie, listening incredulously but weakly to the dogged lying of the genuine London cabman, who has followed him into the station for double his fare. He has bouncing charms across his waistcoat, a courier's bag at his hip, and upon his head the hideous hat the lower breeds of his countrymen have assumed of late. Lean and fair, his eager, angry wife, a miracle of gloves and ribbons, angrily remonstrates and would resist the extortioner. She confronts, with the fussy spirit of a hen, the blank impudence of the cabman, who, stolidly holding a florin in his palm, avers that between Leicester-square and Paddington are more than tea cab miles.

Just about to enter the carriage comes the prettiest group of all, placed pain-

fully in contrast with that we shall next describe. The first is the departure of a young bride with her new husband. He is a blond-whiskered young Englishman, daintily dressed, who turns from the lady upon his arm to answer the query of the smart groom beside him touching the disposal of a lady's new dressing-case held up for view. Two fair bridesmaids, evidently sisters of the bride herself, tearfully take leave. They are yet in full dress—a pardonable oversight on the painter's part, who might be thankful to employ his softness, brilliancy, and dexterity of touch upon fabrics such as would light up his picture. The painting of these robes is admirable in all that clever dash which Mr. Frith is unrivalled for. The bride has eyes like a dove; her robe is dove-hued, of faintest tints. In front of the new couple sobs the lady's youngest sister, a child, to whom a gallant little boy in green velvet tenders consolation with infantile gravity, much to their nurse's amusement, who stoops to the crying girl for the same purpose. The sparkling prettiness of all this group recalls some of the most fortunate portions of the artist's "Ramsgate Sands."

Just in front of these is a shocking incident, told with characteristic force and expression—the arrest, just as he got into the carriage, of a forger, by two London detectives: portraits of men famous in their way are these before us. Pale bronze green is the face of the man when the mufflers drop from his chin, paralysed the hand that lets fall the bag with a crash upon the floor, ghastly the face of his wife, who has risen from her seat to see the felon taken from before her. The incident is too painful, too unusual to be characteristic, but it is well told. Let us turn from this to the departure of two boys for school after their holiday. This is right in front, and almost in the centre of the composition. Mr. Frith has never painted a shawl or other texture with more splendid dexterity and skill than that which the full-blooming mother wears who stoops over the younger boy and kisses him, drawing him towards her. The dainty crispness of all her apparel is inimitable, from the pure white bonnet to the lustrous silk of her brown gown. Her face is motherly and graciously full-blown, excellently expressive. Not less so is the boy's action, who, conscious of a new cricket-bat, can but embrace his mother with one hand that is disengaged. The remainder of this group comprises the father, the sister, little stay-at-home brother, and the elder scholar. The last is a capital point; he is a valiant but soft-hearted youngster, who, having made up his mind to go through the parting like a man, does his best, but it will not do—these swollen lips and red-edged eyes tell of a night of tears. In his waistcoat pocket is a new watch, as the stiff-jointed chain tells us that hangs through the button-hole. More sensible, because older than his brother, he forgets even this at the moment, and would, if he dared, sob heartily; what strengthens him most, and, perhaps, at the same time, shames him most, is the cleverly-introduced point Mr. Frith has given us of the hand of the father being affectionately pressed on his shoulder.

We think Mr. Frith has found his greatest enemies in the Directors of the Railway Company, who, having removed Mr. Owen Jones's decorative colour from the roof and columns of the station that form the background of the picture, have compelled him to introduce an enormous mass of grey, such as all the resources of his individual skill have failed to overcome. To counteract this, he has been compelled to localise more than in another case he would have done. It may be that he did not care to employ sunlight in this picture, as in the "Derby Day" and "Ramsgate Sands," otherwise much of this misfortune would have been overcome by that effect being introduced. As it is, taking the picture for what it is—an effective representation of the incidents of a striking and peculiar scene of modern life—it is undoubtedly a noble and dramatic work. What the dexterity, cleverness, brightness, and lightness of touch—no trivial accomplishments, let us assert, nor gained without infinite labour with happy ability—Mr. Frith possesses can do, we need not say. All that little points of humour and comic hints can give of interest to a picture are here. All the sparkle of modern life, all the lustre of modern dresses, all the character of modern faces; everything that can interest, and remind and amuse, are here, with grim pathos of modern crime, stark-naked, in the midst of them.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE next ordinary general meeting of the session will be held on Monday evening, the 28th inst. Her Majesty having been graciously pleased to approve of the presentation of the gold medal to the Rev. R. Willis, Jacksonian Professor, Cambridge; the royal medal, the silver medal of the Institute, and the other prizes awarded at the special general meeting, will be presented by the President at this meeting.

The following paper will likewise be delivered, "On Jewish and Roman Architecture in Palestine, from the earliest period to the time of the Crusades," by Signor Pierotti, architect to the Pasha of Jerusalem.

The following are the amended instructions for the Soane Medallion:—That the Soane Medallion be awarded for the best design, well illustrated by a sufficient number of drawings, for:—A church, to contain 1,500 persons, without any detached columns or piers, and so as to leave the view clear and unobstructed throughout. The style may be either Italian or Mediaeval. The drawings to consist of plans, sections, and elevations, drawn to the scale of $\frac{1}{8}$ of an inch to the foot. The plans and sections to be tinted in sepia only, and the elevations to be in line only. Perspective drawings may also be sent, and they may be tinted or hatched. The successful competitor, if he go abroad within three years after receiving the medallion, will be entitled to the sum of £50 at the end of one year's absence, on sending satisfactory evidence of his progress and his studies. The competition for the Soane Medallion is open to all members of the profession under the age of thirty years.

Messrs. T. Hayter Lewis and James Bell, hon. secretaries of the Institute, have issued a circular, in which they state:—

We beg to inform you that we do not propose to offer ourselves for re-election as honorary secretaries at the ensuing annual meeting of the Institute. Since our election we have done our best to fulfil the duties of the office, and have, in the execution of them, met with so much kindness, and have been enabled to form so many, and, we trust, lasting friendships amongst our brethren in the Institute, that we shall always regard the few years which we have passed here as honorary secretaries with the most agreeable remembrance, nor should we have resigned, so long as we possessed the confidence of the members, if we could have continued to afford the time required to fulfil adequately the duties of the office. This, however, we are unable longer to do, and we can, therefore, only tender to you our resignation, accompanied by our sincere thanks for your uniform kindness, and with our best wishes for the continued prosperity of the Institute.

We are, dear Sir, yours very faithfully,

T. HAYTER LEWIS.
JAMES BELL.

* From the *Athenaeum*.

THE BRITISH MUSEUM.

THE decision of the Government on the subject of providing additional accommodation for the collections of the British Museum is now definitely announced, by the publication of the correspondence which has passed between the Lords of the Treasury and the Trustees.

The Trustees, at intervals within the period of a year, urged the question on the Government, and finally called their attention strongly to the fact that, from sundry recent accessions to the Department of Antiquities, the want of space had become so intolerable as to demand an immediate and effectual remedy. The reply was conveyed in a lengthy Treasury minute, dated 13th November, 1861, in which it was announced that, as the Government alone had to bear the responsibility of making a proposal to Parliament, they considered it to be their duty to review the entire subject, and, while weighing conflicting opinions, to arrive at a practical conclusion.

Although the Bloomsbury site had excellently served its purpose, yet, considering the growth of a city continually stretching outwards, substantial reasons might be found for separating the collections, for which, however, it was important to choose a spot easily accessible. If the internal communications of London were to remain fixed, a site so accessible as Bloomsbury to the mass of the population could hardly be suggested; but, as these communications are felt to be imperfect, and must be increased, other spots on leading lines of thoroughfare might become in process of time even more accessible—except to those living in the immediate neighbourhood—than that on which the Museum now stands.

The cost of a site on the estate of the Royal Commission of 1851 would be less, by some hundreds of thousands of pounds, than at Bloomsbury; and, moreover, if the Natural History Collections were removed, a fabric of a much cheaper description than the British Museum might and should be erected for their accommodation. The saving to be effected at Kensington, under the two heads of site and buildings, would thus be very great.

My Lords conclude by stating that, in their judgment, some of the collections ought to be removed; and that they will be prepared to make proposals to the Royal Commissioners for the provision on their estate of space sufficient to receive, at first, the Mineralogical, Geological, and Palæontological Collections; and ultimately, if thought desirable, for the remainder of the Natural History Department.

At a special general meeting of the Trustees, held on the 3rd December, and attended by nine members of the Government, it was resolved to appoint a Committee to consider the mode in which the proposals of the Treasury minute could be best carried into effect. This Committee consisted of five Trustees—the Speaker, the Duke of Somerset, Mr. Walpole, Mr. Towneley, and Mr. Grote. They held some meetings; and in January, after having conferred with Mr. Smirke and the heads of departments, they adopted, with slight verbal alterations, a report which had been prepared at their desire by Mr. Panizzi. The report was privately printed and sent to each Trustee, with a notice requesting his attendance on the 10th February at a special general meeting, at which it was to be taken into consideration. It was then received, and its suggestions adopted.

The Committee recommend in their report that all the objects of natural history should be speedily and simultaneously removed. The Botanical Collection may, perhaps, be moved to Kew-gardens, if a small series be reserved to illustrate fossil botany in connection with palæontology. The Ethnological Collection should be provided for elsewhere, and the portraits may be moved to the National Portrait Gallery.

The accommodation gained by the removal of these collections would amount to 63,719 square feet.

Although the Antiquities and Library Departments have the chief claims to the redistribution of the vacated space, the Committee think that other divisions of the Museum have also claims on their consideration. The buildings now used for the administrative part are deficient in space for clerks, and stationery, and papers of all kinds, and for the transaction of business, besides being subject to inconvenience from the unsuitable arrangement of rooms. Next, it is absolutely necessary to provide for the exhibition of coins and medals, and a selection of gems, cameos, and valuable ornaments. In the Department of Prints and Drawings space is required for classifying and arranging the whole collection, and for exhibiting such selected works as may convey a general idea of the progressive practice of both arts. Rooms for studies are wanted, too, in this department. The Committee have also to consider the confined space for binding books, and they suggest that adequate provision should be made for having all books bound within the Museum premises—an arrangement which had been allowed to be temporarily infringed upon.

The structural alterations, which are proposed to be effected, are, of course, subject to such modifications as may hereafter be determined. They are mainly comprised in the following suggestions.

Right and left within the readers' entrance of the corridor leading to the reading-room are to be new staircases. The present staircase on the left of the entrance-hall is to be removed. With the area thus gained, and by taking down the wall which divides the staircase from the Roman Gallery and substituting columns, a room, 94 feet by 60 feet, will be obtained for antiquities. The removal of sundry partition walls, and the appropriation of pieces of unoccupied ground to the west, will allow additions to be made to the Egyptian Gallery, the Græco-Roman Saloon, and the Elgin rooms.

On the upper floor, the rooms now occupied by Geology, Mineralogy and Palæontology will be transferred to the antiquities, which already occupy the west side. Such is the solidity of the building that all the

galleries on this floor might be used for the exhibition of sculptures, even of large size.

When the new library and reading-room were erected, it was believed that there would be space for 800,000 volumes, calculating the annual increase for 40 years at 20,000. But the annual increase has now reached 35,000 volumes; and, although the new building will contain more books than it was originally estimated to hold, yet, if the present rate of increase continue, it will be full in about 25 years. Alterations are indicated which would provide additional space for 200,000 volumes. Details are given of the proposed accommodation for the binder, for the Trustees' offices, and for the several collections of prints and coins. Into these it is needless to enter more particularly.

The proposed additions to the departments retained in the Museum are shown in the following list:—

	Present space.	Proposed addition.
Printed books	117,746	17,803
Manuscripts	13,178	3,430
Antiquities	91,784	67,692
Coins and Medals	2,950	4,960
Prints and Drawings	2,690	5,554
Collections, &c.	6,724	3,626
Binders	4,539	3,221

The Committee urge that the erection of buildings on unoccupied ground at the Museum should be proceeded with at once, and also that no time should be lost in providing buildings for the reception of the Natural History Collections; because, until this be done, no redistribution of the vacated space can possibly be undertaken.

The Chancellor of the Exchequer has announced his intention of introducing a Bill into Parliament for the purpose of legalising the separation of the collections at the British Museum on the plan proposed, and for maintaining the control of the Trustees over the several collections.

The site designated by the Royal Commission is understood to be that temporarily occupied by the western annexe to the International Exhibition, and forming the east side of Prince Albert's-road. As the Government wish to have eight acres of land, a portion of about two acres with a frontage to Kensington-road will, probably, be added in order to obtain the required extent.

FIVE SHILLING DAYS AT THE EXHIBITION OF 1851.

SOME one has said, with more smartness than truth, that "nothing is so fallacious as facts, except figures." A saw of this kind, having with it a certain epigrammatic ring, passes current, and is handed about by those even who are aware of the great value of statistics. At all events, it may be safely averred that there is one thing more delusive and less to be relied upon than either facts, or figures, and that is popular impression. Many supposed "facts" rest on no sounder basis than general belief, and will not stand the test of those "figures" which are described as so deceptive.

Some complaint has been made about the number of days immediately succeeding the opening of the International Exhibition that are set apart for those only who pay five shillings on entrance. Now, what the Commissioners have to regard is the eventual profit of the Exhibition, and, to insure that, they should arrange the scale of charges for admission so as, if possible, to prevent the guarantors from being called upon to make up any deficiency. In this view, therefore, they are clearly free to act on their own judgment, and are quite justified in having an eye to the interests of all classes; and, moreover, they have an incontestible right to fix the admission fee at whatever sum they please. Granted that a high charge thins the attendance, that is the very end in view—to let people walk about comfortably and easily, without the insufferable, stifling sensation produced by mobs, whether of well-dressed or ill-dressed persons. Which of us is not familiar with the heat, the dust, and the weariness inseparable from any general gathering? After all, is five shillings too high a price to pay for peace and comfort?

The almighty shilling is always ready to rise up and inveigh against high charges, not in the least with any idea of cheapness, but upon "principle;" not, of course, thinking of self, but thoroughly single-minded, and anxious to place the honest, hard-working man—ever and always him—on a footing with the highest in the land. If the objectors could not hereafter enjoy abundant opportunities of making as many visits as they choose "at their own prices," there might be some cause for grumbling. But, it will be urged, it is the shillings that pay—it is the money of the many, and not that of the few, which makes the success of any show, or entertainment. Most persons, if asked their impression as to the receipts of the former Exhibition, would unhesitatingly say that the crowds which entered on the shilling days were so enormous as to forbid the hope of any comparison with the early days of high prices. Nevertheless, it happens that, on a careful examination of the amount received each day at the different prices—whether at the 5s. charge during the first three weeks, or at the subsequently reduced rates—there is a most remarkable agreement between the sums taken. The Exhibition of 1851 was open to the public on 140 days (exclusive of the 1st of May, when no payment was made at the doors), and the total receipts were £356,808 1s.; so that the average for the whole period was £2,548 per day, while the average of the first three weeks, at the charge of 5s., was £2,546.

On the 1st of May season ticket holders only were admitted; on the 2nd and 3rd, the payment for admission was a pound. From the 5th to the 24th (inclusive), the charge was 5s. Friday and Saturday then became, respectively, 2s. 6d. and 5s. days, ending with Saturday, August 2nd; and

thenceforward, till the close of the Exhibition on October 11th,* the charge, on Fridays and Saturdays, was 2s. 6d.

While on this subject, it may be interesting to mention that from the gross receipts a sum of £529 17s. 5d. had to be deducted for losses on light gold, and defaced, spurious and foreign coin. Of counterfeit English money there were 12 crowns, 260 half-crowns, 1,034 shillings, 90 sixpences, and 3 fourpences, making altogether the amount of £90 5s. These returns seem to disprove the notion that, from their greater value, half-crowns and crowns are most commonly imitated. As no change was given at the doors, it follows that there were 272 utterings of the larger pieces, as opposed to 1,080 at the lowest, or 1,127 at the highest computation of the smaller coins.

The total number of visitors was 6,039,135. In the refreshment department the various classes spent on an average about threepence per head; those at 5s. laying out 44d.; those at 2s. 6d., 48d.; and those at 1s. 24d. per head.

The season tickets were, for gentlemen, three guineas; for ladies, two guineas; and the total number sold was 25,605, of which 13,494 were gentlemen's, and 12,111 ladies' tickets; the net amount received being £67,514 1s. Of this sum, £386 10s. was received from the sale of 135 gentlemen's and 184 ladies' tickets, at the reduced rates of 30s. and 20s. respectively.

ARCHÆOLOGICAL INSTITUTE.

AT the meeting of the Archæological Institute, April 4, OCTAVIUS MORGAN, Esq., M.P., V.P., in the chair, Mr. WATERTON read a paper "On the Art of Niello," preliminary to the proposed exhibition by the Institute, in June, of a series of specimens, combined with examples of enamel, so as to show the progress of the two mediæval arts of decoration, which contributed largely to the enrichment of ancient jewellery and metal work. He described the process employed and the nature of the metallic compound of silver with other metals, sulphur and borax, termed *niello*, and traced its use by the Etruscans and Romans, noticing examples in the Kircherian Museum and the Vatican, of which the date has been assigned to B.C. 600. After the Christian era the specimens are comparatively frequent, and several fine works existing at Rome were noticed, as also one in Mr. Waterton's own collection—this is a ring of the seventh century. He proceeded to trace the art among the Anglo-Saxons, who were celebrated throughout Europe for skill in goldsmithy; and he instanced the gold ring in the British Museum, bearing the name of Ethelwulf, father of Alfred, in *niello*. This curious art, chiefly employed on silver ornaments, was practised also in Ireland, and fine specimens exist in the Museum of the Royal Irish Academy, also on the Cross of Cong, wrought about 1185. *Niello* is found also on the Scottish brooches, of which the Duke of Hamilton and the Marquis of Breadalbane had exhibited examples at previous meetings of the Institute. The art was doubtless introduced from Italy, and Theophilus, in his valuable treatise on Ancient Arts, states that the Tuscans excelled in its use. Mr. Waterton described a few of the most beautiful specimens of later times, such as church ornaments, well illustrated by Ciesgnara and other writers. *Niello*, he remarked, has a peculiar interest, as having led to the art of caligraphy and the transfer of engraved designs to paper, through the precious discovery by Maso Finiguerra. *Niello* was much used by Cellini and the later Italian artists in metal, and has lingered amongst the Russians, by whom numerous works thus enriched are produced to the present time; but they are deficient in delicacy of design, and the artistic effect displayed in mediæval examples.

Mr. BURTT, Assistant-Keeper of Public Records, then read some notices of the "Early Use of Gunpowder in the English Army," which he had found in the Pipe Rolls of the Exchequer, relating to the campaign of Edward III., in 1346, in which the Battle of Cressy was fought.

Sir FREDERIC MADDEN then gave a discourse on a charter of Edward the Confessor to the Monks of Westminster, dated 1066, with his seal enclosed in a bag of beautiful tissue. This document was sent for the inspection of the Institute by the Earl of Winchelsea. It was printed by Dugdale in the *Monasticon*, having been found by him in the Hatton Library, at Eastwell, in 1640, and since that time it had never been submitted to critical examination until the present time. Its authenticity, Sir Frederic observed, had long been questioned; many charters exist of early periods, fabricated in some cases, probably to supply the loss of genuine instruments; examples occur among those relating to Croyland, Peterborough, Worcester, &c., but the monks of Westminster seem to have been most skilled in such imitations. Sir Frederic stated that, of all monastic documents prior to the time of Henry I., none was free from suspicion.

Mr. FERGUSON gave an account of a recent discovery in Carlisle of a curious Roman sculpture, representing, as Mr. Franks suggested, a soldier of one of the legionary cohorts quartered on the line of the Roman wall.

Mr. LYOCK communicated a memoir on ancient gardens, illustrated by plans of the gardens at Blois and other places, and by a piece of French tapestry, date about 1550, in which numerous representations of garden decorations are displayed.

Amongst objects exhibited were a fine series of Papal medals, from the sixteenth century, by Professor Westmacott; Italian gold rings, by Mr. Waterton; a document with a unique impression of the seal of the Captain of the Isle of Wight, by Mr. Hewett; and a silver watch, presented by Charles II. to Captain Tattersell, by whom he was conveyed to France after the disastrous battle of Worcester in 1651. This watch, made by the celebrated Hooke, was brought for inspection by Mr. Rhodes.

THE FRENCH ARCHIVES.—An extensive addition has just been made to the Palace of the Archives of the Empire, by the completion of a large fire-proof building at the corner of the Rue des Quatre-Fils and the Rue du Chaume, Paris. The walls are all two metres thick, and the floors of iron. The general archives of the Empire comprise several millions of documents, contained in 300,000 boxes, bundles, and registers.

* The building was opened, without charge, to exhibitors and their friends only, on 13th, 14th, and 15th October.

THE STREET ARCHITECTURE OF LONDON.—MR. EDMESTON'S LECTURE.

IN our last we gave a report of the lecture delivered by Mr. JAMES EDMESTON before the Society for the Encouragement of the Fine Arts, at 9, Conduit-street, Regent-street, on Thursday se'night.

The chair was occupied by Mr. E. B. LAMB, who, in introducing the lecturer to the meeting, remarked that the subject of street architecture was one of great importance, and that he was afraid it had been much too lightly treated in this metropolis.

The lecture having been read, the CHAIRMAN said he had no doubt some gentlemen present would have something to say on the very interesting subject of Mr. Edmeston's very able paper. The paper contained many points of deep interest, but it was almost impossible to go into the whole of them. The antiquity of London and the different names now given to old places was a point of importance. We were very apt to lose sight of the old things by the new position and the new garments they were placed in. As to Crosby Hall and other buildings referred to by the lecturer, they were possessed of immense interest, looking at the position they held in the history of England. As to Crosby Hall, lovers of antiquity knew the building and admired it, but they saw from time to time beautiful fragments of carving in wood and stone placed under the most barbarous demolition that could possibly happen. He knew that more than twenty years ago a great portion of the old building was taken down and sold. After a time it changed from being a packer's place to a music hall. Now it seemed there had been another change, which did not improve the building. In the change one regretted to see a building of so much interest so completely forgotten, and left to destruction as it was. Mr. Edmeston had alluded to the changes that necessarily took place in all countries in art arising from various circumstances. They knew very well that the architecture of 300 years ago would not do for the architecture of the present day. As man improved in his wants and manufactures, and so on, architecture must also improve; and it had done so. One of the great errors of the present day was to put improved wants and manufactures into old garbs and antiquated forms. That was not what they ought to do at the present day; they ought to advance the noble art of architecture with the art manufactures of the day. He remembered some few years ago a society established, which would never admit that there was an architect in existence who could design a church or a building, and themselves usurped the power of doing everything. Many men had been cramped by the opinions of people, and thus architecture had been kept in trammels. Mr. Edmeston had alluded to the sky-line, to uniformity of line, and various other subjects of that nature, which led to a very difficult and troublesome matter. First, architects had to deal with that obstinate and stubborn animal John Bull, who, possessed of his square yards, said "This is my property, from the ground to the sky, and I will do as I like with it; if I can build my six or ten stories high, and can get rental for them on my bit of land, it will be better than all your architecture, and it will also pay me better." As Mr. Edmeston had remarked, cornices might be made useful by greater attention being paid to their arrangement. Then there was another difficulty which architects had to contend with, and that was an Act of Parliament. Unfortunately, Acts of Parliament were not made by architects, and so they could not expect artist-matters to be well considered. Attention to the sky-line was recently coming more into fashion, and when followed with ability and carefulness it was likely to produce most interesting architectural effects in London. But it might be that instead of care being taken that a particular sky-line should harmonise with some other sky-line and produce a fine effect, the sight might be destroyed by the introduction of incongruities. He trusted, however, that in the course of a little time, through education on the part of the public in the art of architecture, such defects would be got rid of. There was no doubt that in respect of education in architecture, there was much to be got over; not much difficulty, but much prejudice. It was no novelty that architecture was looked upon as a mere dry line-and-rule science, and that it was nothing but Euclid put in a different form. That was the opinion of the general public as to what architecture was. Now, the principles of architecture were as simple as possible, and as easy of acquisition as the broad principles of painting. He liked to hear a man not connected with art say that he liked this or that painting, or this or that building, but why he liked it he could not tell. Still, that he did like the painting or building was a great point, and a little education would teach that man why he should be pleased with the building or painting. They ought to inculcate simple principles as much as possible. The great aim of the architect was to make a building so as to impress the mind that it was a beautiful object; and what could be beautiful that was not harmonious? He thought that the lecture delivered by Mr. Edmeston that evening would be exceedingly useful in the education of the general public. As to street architecture and its incongruities, they found Gothic houses next to Greek houses, but such things could not be got over without teaching the people, and it was for architects to do so as much as possible. It was to be hoped the public would not look on architecture as a dry art, but as one that was very simple, and the general principles of which were very easily acquired.

Mr. HURLSTONE referred to the sky-line of buildings, and to one of the greatest deformities in the street architecture of London. If a person went to the south side of Belgrave-square and looked towards the east side, he would see a range of buildings having some architectural pretensions, but when he looked at the sky-line he would find a medley of chimneys in all forms, which made the whole thing perfectly ridiculous. Then if a person went down looking towards Wilton-street he would find a uniformity in the buildings, but there was no sky-line, and a forest of chimneys presented itself in all directions. It might be said that chimneys at the top of a house were in some degree a sort of untameable objects which could not be managed, but then they should remember that there was a beauty added to Venice by the chimneys, and that the last thing a person would wish would be to see them away, for they made a most beautiful ornament in many of the ancient cities, as at Nuremberg. A chimney was not an unsightly thing if properly treated. In alluding to architecture as an art, the lecturer seemed to imply that beauty in the decoration of a city was a thing separate from usefulness and conveniences. Now he (Mr. Hurlstone) said fitness, propriety and convenience were often the very elements of beauty, and that beauty sprung out of them. One reason for the ugliness of London was that it had not been built freely on the ground of fitness, propriety and convenience of the circumstances. One circumstance had tended to injure the street architecture of London generally. There existed, years ago, and it continued for many

years in operation, a window tax, and builders so erected houses as to economise light and air as much as possible, in order to evade the tax. That was an element which no doubt influenced the street architecture of London a considerable time, and it interfered with convenience and fitness. It was impossible for architects or builders at that time to adopt the spacious windows of the Flemish or Venetian schools, for the windows had to be built as much as possible to evade the tax.

Mr. STEWART quite agreed with the last speaker as to the impolicy and inutility of the window tax. As to the paper read by Mr. Edmeston, he was very much interested in it, and very much instructed by it; the spirit in which it was written was an instructive spirit as well as a good one—(Hear, hear). Mr. Edmeston said something in his lecture about the advantages of having high streets. Now he thought that was a subject about which there might be two opinions. In southern climates high streets were very essential as a protection from the sun, and in Italian cities they were used for that purpose. But he was not so sure of the utility of high streets in a humid climate like ours. Some streets, where the houses were high, as at Edinburgh, were never touched by the sun. As to the picturesqueness which Mr. Edmeston spoke of, he was not sure that the picturesque in treatment was the highest style of treatment; on the contrary he was inclined to think it was a lower style of treatment than the classical. He had no doubt they all knew Turner's print of ancient Italy, and he was certain that the outlines of that print presented a far higher and more dignified style of treatment—and it was all classic—than any of Prout's best productions. By comparing the picturesqueness of Prout with the classicality of Turner, he had come to the conclusion that the classical was a far higher style of beauty than the mere picturesque, as shown in the print he had referred to. Architects were not to be blamed, said Mr. Edmeston, if it was found that in some portions of buildings they exhibited well-considered plans, while in other portions there were plans which were not well considered, the blame being attributable to the clients. Now he did not agree with that. He thought they were in a transition state on that subject, and architects, artists and decorators had to contend with this, that their own minds were not fully developed, and even though they had the intellectual power, the reasons for arriving at conclusions were not always within their grasp. They were becoming more and more educated, but an architect might show an amount of education in one portion of a building, while he showed a want of education in another portion. That should not be laid to the ignorance or caprice of the client. As to the reference which had been made to the works of the French, he thought they could find a far higher style than the French—he meant the Italian—which, though not very popular at present, contained far higher principles, and, when fairly developed, was a far more vigorous and more noble art than that in France.

Mr. DUTTON said he could endorse a great deal which Mr. Stewart had said. In France they were altering their style of architecture; they used to have high houses, but now they were lowering them and widening their streets. He had noticed that many houses might have been more beautiful if they had been originally constructed well. There were two great defects in architecture—bad ventilation and smoky chimneys. Now the client could have nothing to do with such defects, the fault must lie with the architect or the builder. He then expressed his regret that the vacant space around St. Paul's had been again built upon, instead of being left open so that the beauties of the metropolitan cathedral might be seen to greater advantage.

Mr. EDMESTON said, in throwing his few remarks together, it occurred to him that it was much better to avoid, as much as possible, detail, and to inculcate very general ideas, for the purpose of exciting an interesting discussion, which he was glad to find had been the result. Everybody could judge as he walked along the streets of what was good in its outline, and whether a building was good in its general parts. And if the public at large could be taught to acquire the habit of looking at main features in that way, we should make a great step in advance—(Hear, hear). Only let the public at large know how to point out defects, and then such defects as imperfect ventilation and smoky chimneys would become scarce and gradually disappear. Mr. Hurlstone justly alluded to the evil effect of legal regulations on buildings; now he (Mr. Edmeston) thought they might have legal regulations for the benefit of buildings. In alluding to the picturesque, Mr. Stewart seemed to be under the impression that he referred altogether to Gothic. Now, such was not the case. He thought that the view of St. Paul's from Ludgate-hill was most picturesque, or, if they liked, poetical—(Hear). He was of opinion that the pall of London smoke had much to do with some of the architectural difficulties which had been complained of.

The CHAIRMAN thought that much inconvenience and annoyance were caused by the erection of "tall boys," or "horses' legs," which led to chimneys becoming smoky. As to gas, if we could get pure gas we should have no smoky walls, but the gas companies could not afford to give us pure gas for the prices charged. In Venice they could afford to do without "tall boys" and with very few fires.

Mr. ATKINSON had had some experience in curing smoky chimneys, and was of opinion that the construction of the grate had something to do with it. Many of the present stoves threw the heat into the room instead of throwing it into the opening of the chimney, which would always lead to the smoke going up the chimney. He thought that the prevalent street cobwebs (telegraphic poles and wires) had a very detrimental effect on the picturesqueness of street architecture in London.

The CHAIRMAN remarked that it was a very easy thing to find fault, but it was not so easy a thing to mend a fault—(Hear.) Criticism upon architecture at the present time was a blank; there was scarcely one man who criticised in the public journals who really understood anything like the broad principles of architecture.

On the motion of Mr. DUTTON, a vote of thanks was tendered to Mr. Edmeston for his very able paper, and the meeting broke up.

SPRING GARDENS.—Lord Kingsdown asked the head of the Admiralty whether the Board of Admiralty intended to persevere in its intention of purchasing the houses in Spring-gardens? He asked this in consequence of a notice which had been served on all occupiers of houses there that the Government would bring in a bill to purchase these houses. In reply, the Duke of Somerset said that the Admiralty were desirous to bring into immediate contiguity to the Admiralty all the Admiralty departments. To do this the houses in Spring-gardens would have been necessary, and the Board of Works were required to serve notices on their occupiers. In consequence, however, of a desire on the part of the Board of Works and the Treasury to reconsider the plans prepared on the subject, no further progress would be made this session.

PLAN AND DETAILS OF MACHINERY SHED OF THE EXHIBITION BUILDING.

WE in our last volume engraved a view of the exterior and interior of the building for the International Exhibition—soon to be the one point of attraction to foreigners from all parts of the world, as well as to every Englishman. We now engrave a plan (pp. 270-71) from the official drawings, which will serve as a guide in that wilderness of iron columns and piled-up treasures. The plan will be readily understood by our readers. They will see at a glance the nave and the two transepts—the main features of the plan—over the junctions of which the colossal domes are built. The large courts to the south of the nave, 250 feet by 200 feet, are likewise conspicuous, as well as the rather smaller ones to the north of it. The columns are in general 25 or 50 feet from centre to centre. By bearing this fact in mind, the various dimensions can easily be arrived at without making use of the scale. The exceptions to this rule are the nave and transepts, which are 85 feet wide. The columns are hollow, and of cast-iron, 1 foot in diameter, with 1 inch of metal. They rest on York slabs, brickwork and concrete, all built up to the same level.

The walls which form the picture galleries, and enclose the main portion of the building, are all of brick. The east and west fronts are 750 feet long, and the south front 1,150 feet. The north front is the lower arcade of the Horticultural Society's grounds—an upper story to which has been added for grand refreshment-rooms. The total area roofed in is 988,000 square feet; the 1851 building occupied only 799,000 square feet.

We also engrave a sheet of details, which really contains the whole of the drawings for the annexes. It is, as everybody seems to admit, the most satisfactory portion of the building in point of design; simple and light in its construction, it forms a very cheap, as well as agreeable, system of roofing. Captain Fowke has used it on several other occasions, and always with a pleasing result. Only the commencement of the annexes could be shown on our plan, but they extend northwards between 900 and 1,000 feet on each side—a tunnel under the Horticultural Society's entrance connecting the eastern one with the main building. The ribs are 50 feet wide, and 15 feet apart. They are formed of planks nailed together. The centre plank is 1½ inch thick, with a ¾-inch plank on either side nailed to it, the ends breaking joint all through; the ribs are nearly half of a regular polygon, described about a semicircle. The springing is 10 feet above the ground line. The uprights are similarly constructed to the ribs, but there are strengthening pieces 4 feet by 3 feet spiked to them on either side. The feet of the uprights are mortised into a sleeper resting on piles. The principal rafters and the uprights are connected with the curved ribs by radial pieces of 1½-inch plank, which are brought rather below the intrados of the curve, and finished off by way of ornament by spear heads. The frames are, therefore, simply planks nailed ingeniously, and so disposed that the weight comes on their edge. One-half of the roof is covered with boards and felt, and the other half has a glazed skylight, with louvres for ventilation throughout the whole length. The span of each rib is 50 feet. In ingenuity, economy, and simplicity these sheds are, as Captain Phillpotts truly said, a triumph of construction.

APPROACHES TO THE CRYSTAL PALACE.

A DECISION was arrived at on Tuesday last by the Committee of the House of Commons sitting on the Railway Bills of Group 1, which is likely to exercise a most beneficial effect on the future prospects of the Crystal Palace. The Chatham and Dover Railway Company have this session promoted a line starting from the junction of their Metropolitan and Victoria lines at Brixton, and proceeding through Peckham, Forest Hill, and Sydenham, up to the road front of the Crystal Palace; and the Committee declared that, subject to the Brighton Company constructing a portion of the line, over which the other company is to have ample running powers, the bill should pass. This important measure will give access to the Palace on a sufficiently high level to avoid the inconvenience caused by the present numerous stairs; and as the new station, which is intended to be placed in Dulwich Wood, immediately opposite the Palace, will have platforms of nearly 1,000 feet in length, with several wide covered lateral approaches to the level of the lower floor of the building, it is obvious that great public convenience will result from the forming of this additional means of access to the Palace. As this new line will also open up the Metropolitan (Underground) Railway by the intended bridge at Blackfriars, the northern railways, the Metropolitan stations in Farringdon-street and the New-road, will thus be in direct communication with the Palace. The chain of communication with the North London Railway by Kensington and Wandsworth is also fast approaching completion, and thus it may be hoped that, ere long, the great desideratum of ready and convenient railway access to the Crystal Palace will be attained.

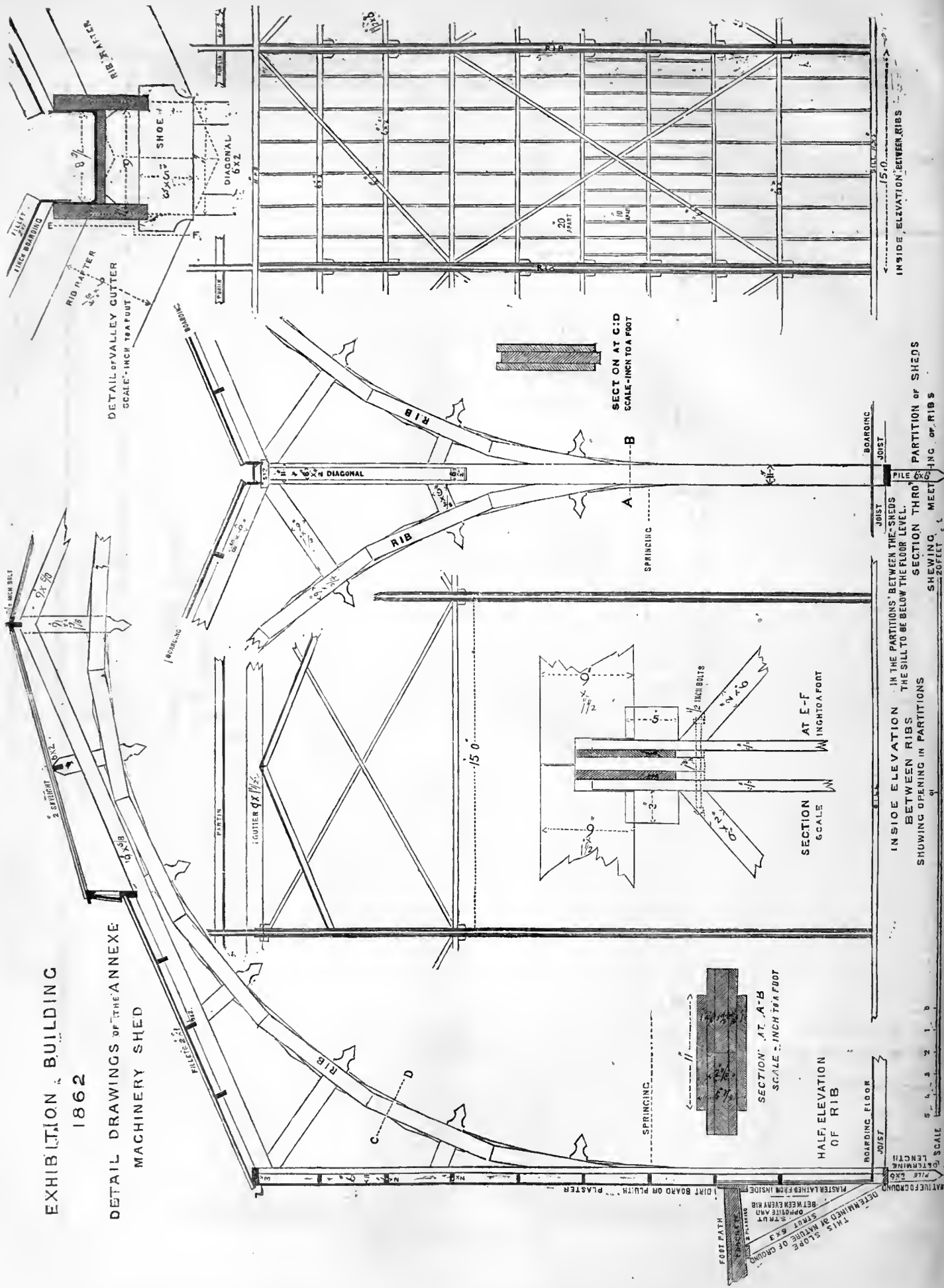
At the present moment considerable works are being carried out at the Palace. The floors of the building in the tropical and southern ends have been replaced with brick walls and piers round each flower-bed in place of the original wooden supports. A new wide triple staircase has been erected, leading from the great transept to the basement, so that the crowds assembled at the Palace on days when the great fountains are played, and other popular occasions, may escape from the building to the gardens, and *vice versa*, without the pressure and inconvenience so often complained of. The enormous roof over the great Handel Orchestra is being rapidly preceded with for the great musical celebration to be held during the coming season.

INSTITUTION OF CIVIL ENGINEERS, IRELAND.—At a meeting of this body on Wednesday evening, the 9th inst., at New Museum Building, Trinity College, Dublin, Professor Dowling in the chair, Mr. Blakiston, C.E., was proposed and admitted a member, and Mr. J. J. Lyons, architect (proprietor and editor of the *Dublin Builder*), an associate. Mr. G. H. Stryke read a paper on "The Construction of the 50 ton crane, Dunbar's Dock, Belfast." It will be found in *extenso* in the *Dublin Builder* for the 15th inst.

EXHIBITION BUILDING

1862

DETAIL DRAWINGS OF THE ANNEXE MACHINERY SHED



THIS DRAWING IS A COPY OF THE ORIGINAL DRAWING IN THE ARCHIVES OF THE ARCHITECTURAL DEPARTMENT OF THE CITY OF NEW YORK. IT IS NOT TO BE USED FOR CONSTRUCTION PURPOSES WITHOUT THE PERMISSION OF THE ARCHITECTURAL DEPARTMENT.



ARCHITECTURAL ASSOCIATION CONVERSAZIONE AND DISTRIBUTION OF PRIZES.

THE Architectural Association *conversazione* for the distribution of prizes took place on Friday evening, when there was a very numerous attendance of ladies and gentlemen. Amongst the gentlemen present we noticed Messrs. A. W. Blomfield, M.A., President of the Association; Thomas Blashill, G. B. New, C. F. Hayward, R. P. Spiers, R. O. Harris, E. H. Lamb, Randall Druce, Teulon, Morris, H. A. Darbyshire, — Oliver, — Isaacs, D. Brandon, J. P. Seddon, B. J. Benwell, &c.

Shortly after 9 o'clock the chair was taken by Mr. BLOMFIELD, the President, who remarked that upon such occasions it was usual to compress the business part of the proceedings into as small a space as possible. That evening the only business was the agreeable one of the distribution of a certain number of prizes. The principal prize was the annual one given by Mr. Tite, M.P., and the Committee of the Association were in hopes that he would be present that evening to give the prizes, but they had received a note to say that his health would not allow him to be present. Had Mr. Tite been present he would not doubt have made some useful remarks, and given some wholesome advice. The prizes had been awarded in the following manner:—Mr. Tite's prizes for the best designs for a Town Mansion, first prize to Mr. H. Hack, and the second prize to Mr. A. Walters. (The successful competitors for all the prizes, which were professional books, received the rewards for their skill and industry from the Chairman amidst loud applause.) The next prizes were for the best designs for a tiled pavement, first to Mr. E. Wimbridge, second to Mr. P. B. Hayward. The next prizes were for the best designs for a piece of wall decoration, first prize to Mr. E. J. Tarver, and the second to Mr. E. Wimbridge. The prize designs were exhibited in the great gallery. He was sorry that the agreeable task of giving the prizes had not fallen upon Mr. Tite, or some senior member of the profession, and had much pleasure in calling upon Mr. Lamb to make a few remarks.

Mr. E. B. LAMB regretted that Mr. Tite, who was always so eloquent on such occasions, was not able to be present and to fill the place which he felt himself so incompetent to occupy. It was gratifying to him, and it must be to all lovers of art, to find the rapid progress which had been made in architecture for some years. Though not an old man, he could recollect the time when architecture was little known and little thought of. When he commenced the study of architecture there was no Royal Institute of British Architects and no Architectural Association. There were a few meetings held of a professional character, but in such remote places that they were little known, and less thought of. But still the feeling for art was progressing. They had Britton's works paving the way; John Carter had previously done his work, and commenced the resuscitation of Gothic architecture, and Pugin the elder laid the foundations in a sound and solid way for the instruction of those who loved the art. They had in those rooms the works of the more recent Pugin, examples of industry, study, talent and thought, which made it a marvel how he could have done them. In the course of time sprung up the Institute; then, or he believed previously, the Architectural Association, or some such society, was established. The Institute became an association of the older members of the profession, useful in its way for concocting, arranging, and settling disputes in matters of minor importance; while the Architectural Association was founded for the benefit, instruction, and advantage of the younger members of the profession. He found that there were many younger members of the profession who were rising up with considerable talent, and they had at that moment an instance before them, in the works for which the prizes given by the president of the Institute had been awarded. The fact of younger members of the profession rising to improve themselves and to make a school of their own was a great epoch in the annals of art, especially in the architectural profession. He had heard Mr. Tite say that in his younger days considerable difficulty was experienced in the study of the art; there were then no books published, or very few, and in fact there was nothing to bring out the talent of the individual. It was left to the individual to work his way as best he could, but now the difference was evident in every way. At the corners of the streets they had examples of the masters of the art, and they had the actual facts, the photographs of buildings all over Europe and indeed the world, placed before them in an absolute form. They had no occasion now to go to Egypt, Rome, or Athens, to study the architectural art, and it was gratifying to find that young men were taking advantage of the benefits offered to them. But this should be considered, that the best examples should be studied carefully—not to be copied but to be emulated. Now, he had no doubt the younger members of the profession would do so, and the Architectural Association was a school formed to accomplish that object. He would have all to think for themselves; let them consider that architecture was not a mere profession of rule and line and compass, and let them bear in mind that those who followed it were artists, and that their great aim was to produce a picture, and to bring all the details into a beautiful form. Artist materials should be employed so as to produce a pleasing effect on the beholder. The painter had done that, and why should not the architect? Architecture was a fine art, and it was so connected with painting that it was inseparable from it. The same laws that governed painting governed architecture. The artist took his palette and colours, and produced a great work on his canvas; the architect took his palette, and with hard materials produced his painting on the ground. The two had to produce the same effect—that was a picture. He would recommend the younger members of the Association to remember the necessity for young men keeping in view that they had to form a place in a noble profession, but one that required intense application, constant study, and constant thought. Though young men might have the advantage of studying under the greatest men of the present age, they must not think that the masters could do everything for them. Unless the pupil was studious and willing to learn, unless he got not only the run of the office, but gathered fruit from every turn, he would not be successful. The younger members of the profession had to consider not only what the master taught directly, but what he taught indirectly, and much advantage might be gained by the study of drawings which passed through an office; and he was happy to say that he could see from the progress going on in art that young men were taking advantage of those things. Now and then they heard a pupil complaining that he had not been instructed—that he had not gained the information he ought to have gained—and he blamed his master. But if such a pupil were a little to consider his own ways, and to think of those portions of his time which he had constantly wasted instead of using them in the gathering of information, he would blame himself more than his master. He felt a great interest in the

profession and a great interest in the rising generation of architects. He was exceedingly anxious that in the future architecture should take that position which it ought to do, and which it ought always to hold. He remembered reading a few years ago, in a journal, where he was surprised to find such a statement, that architecture had been ignored as one of the fine arts, that it was not one of the fine arts, and ought to be kicked out of the Royal Academy. That was a remarkable incident, arising from what cause he could not tell at all. He would impress on the younger members of the profession that architecture was a fine art—not a mechanical art; that it was an art of mind, that it required intense application, a predisposition for it, and a thorough analysis of the works necessary to produce it. It was very frequently the case that talented young men, whose nature had been blessed with the power of producing clever compositions, would bring them on paper and lay them down, and they were praised, and properly praised, for their talented works. Well, one of the best things for such young men to do was to criticise their own works, and to analyse them to the most minute detail; and they should be careful in their criticism of the works of others; they should not descend to ridicule, for in art nothing was so painful or degrading as to attempt to turn that which was intended to be a fine work of art into ridicule. They had too many instances of criticism of that kind, but he would not dwell upon them. However, young men should criticise their own works, and not ridicule the works of others. It was very gratifying to him to find that such clever designs had been produced by the young men of the Association, and that prizes had been awarded to them.

Mr. G. GODWIN wished success and continued prosperity to the Architectural Association. He should have been glad to see more members of the profession there that night. He thought if the older members of the profession would take the pains to come amongst the younger members of the Architectural Association, and likewise exhibited their designs in the Architectural Exhibition, they would derive an advantage thereby, especially in the admiration of the younger members of the profession. There was no question as to the great advantages derived from the establishment of the Architectural Association, and many architects now in high places had been members of it. He had reason to believe that there would be a very extraordinary display of architectural drawings at the forthcoming Great Exhibition, not only British, but French and Belgic, and he had no doubt from what he heard that Britain would hold her own, as she had at other Exhibitions.

THE PRESIDENT said it could not be too generally known that on all occasions like the present the members of the Association were too proud to have the older members of the profession present.

Mr. J. P. SEDDON, as an old member of the Association, and remembering the great advantages he had received from it, wished to say a few words. Though not now a member of the Association, he read, with much interest, the reports of its proceedings in the professional journals, and was glad to find that the Association had a regular course of professional study. One great advantage of such an Association was the enthusiasm which a number of young men gave one to the other, the emulation it caused, and the rubbing off angles which all of them had. Young men ought to study thoroughly whatever subject they had in hand, and to produce a good thing rather than a new or original one. And particularly while they were students they ought to carry out a constant method of studying, taking up one branch and then another, and studying it well, instead of going on desultorily, and in that way they would advance the profession. If each member of the Association would work out one building, or one part of a building, and compare notes with his fellow members at the end of the session, greater good would be effected than by the adoption of cruder notions of design. He was exceedingly glad to find that the Association had a modelling class, which must prove of great advantage. He recommended them to practise the drawing of the figure—they ought to do that, or they would never excel.

LEICESTERSHIRE ARCHITECTURAL AND ARCHEOLOGICAL SOCIETY.

THE usual bi-monthly meeting of this Society was held in the Town Library, Guildhall, Leicester, on the 31st ult.; the Rev. G. E. GILBERT, rural dean, in the chair.

A letter from the editor of the *Gentleman's Magazine* was read, from which it appeared that unless that magazine is better supported by those interested in antiquities, there is a probability that, after an existence of 130 years, its publication will be discontinued.

Mr. C. J. LEA, of Lutterworth, exhibited, through Mr. North, one of his outline drawings of a series of mural decorations he is now at work upon for a new church at Rochdale, dedicated to St. Alban, the Proto-Martyr of England. Mr. Lea has sent to the International Exhibition a screen showing the whole of the decorations, from the floor to the cornice, of one space between the windows on the north side of the chancel. The portion sent to the Exhibition is about 20 feet high by 4 feet wide, and shows the proposed scheme for the whole of the decorations, which consist of drawings depicting the principal events in the life of St. Alban. The whole of the subjects will fill up all the available space on the chancel walls between the windows, the figures not going higher than the springing of the window arches. The wall space below will be line diapered, with emblems, &c., occasionally introduced. That part of the wall above the windows and figures will be filled with conventional foliage, diapering, &c., and the roof will be richly coloured and gilded. The carved stone canopy to sedilia, as well as the carving to the chancel arch and organ screen, will be gilded.

Mr. NORTH remarked that Mr. Lea had lately secured the extra colour prize offered by the Ecclesiological Society.

The Rev. J. H. HILL exhibited a small coin of Constantine, found at Medbourne, and a shilling of Charles I., found between Cranoe and Glooston.

Mr. FETCH exhibited some Anglo-Saxon antiquities, found about two years ago, with a number of skeletons, upon high ground on the north side of that town. They consisted of a number of beads, of different sizes and materials, and the remains of a knife; pottery was also found, but the workmen being ignorant of its value, did not attempt to preserve any vessels, or remains of vessels which came in their way. Since then other operations have been carried on upon the land, and although every care has been taken to examine the earth, and to search for relics, nothing beyond several skeletons has been found. These, however, and the peculiar geological formation of the ground, are not without considerable interest, as appeared from a communication addressed to the secretary by Mr. Ingram, of Belvoir, who was at Melton to watch the working of the ground.

Mr. G. C. NEALE exhibited water-colour drawings of Skeffington Church (interior) and Billesdon Church (exterior) before their recent restoration.

Many other subjects were communicated, and the Rev. J. H. HILL read a paper upon the Langtons of Lincolnshire, which he illustrated by two worked pedigrees of that family.

INSTITUTION OF CIVIL ENGINEERS.

At the meeting on April 1, JOHN HAWKSHAW, Esq., President, in the chair, the first paper read was on "Railway Accidents—their causes and means of prevention, showing the bearing which existing legislation has upon them," by Mr. JAMES BRUNLEES, M. Inst. C.E.

The author proposed to treat the subject by dealing with the facts as they were, the causes of accidents being, in nearly all cases, sufficiently apparent; he would not, therefore, attempt by theory to establish rules for their prevention. From the reports of the officers of the Board of Trade, it appeared that during the seven years from 1854 to 1860, the number of accidents amounted to 540, as the result of 1,274 distinct causes. Of these accidents, 11 per cent. were attributed to the permanent way, 7 per cent. to the rolling stock, and 76 per cent. to the management, including insufficient means for securing safety, leaving only 6 per cent. as not ascertained.

The accidents due to the permanent way were then referred to in detail, and it appeared that the general defects were most evident in the system of ballasting, of joint-fishing, of turning the rails, and of fastening the chairs to the sleepers. With regard to the ballast, it was argued that it would be found economical to have at least 6 inches or 9 inches of rough gravel or broken stone, as a free draining bed to the sleepers and to the "top-dressing;" and that, during the months of September and October, an extra number of men should be employed to drain the ballast and beat up the road, in order that it might become consolidated before the winter's rains and frost set in, and thus avoid the evil effects of frost or wet ballast. It was urged that the plan now in general use, of placing the fish-joint between two sleepers was objectionable, as the ends of the rails were unsupported except by the fish-plates, which together were frequently only equal to two-thirds of the section of the rail. It was submitted that all the joints should be fished directly over a sleeper, or that a bracket chair should be used. The practice of turning the rails was condemned, because when a rail was so much worn as to require turning, its strength was generally so reduced as to render it unfit for main line traffic. With regard to the fastenings of the chairs to the sleepers, it was urged that it was desirable that iron spikes only should be employed on the outer side of curves, or else that the chair should be partially sunk into the sleeper, to lessen the strain on the treenail. The superior economy of steeled, or partially steeled, rails, points, and crossings, was also incidentally noticed.

In reference to the accidents which had arisen from defective or neglected rolling stock, it was found that many of the fractures had occurred during the winter months, owing, possibly, in some degree, to the rigid state of the "way" in frosty weather; whilst others were due to the use of bad iron, and some to defects either in the welding of, or in the mode of attaching the tyre of the wheels. Steel, or partially steeled, tyres were now, to a certain extent, in use, and tyres formed of a continuous ring, or unwelded piece of metal, were also successfully employed. Several new methods of fastening the tyres had proved as fruitful of mischief as the ordinary plan of simply shrinking them on, though others had been found to be efficient; and it was said that on some lines the tyres had not failed to any great extent. The author hoped that the importance both of the tyres and of the axles of wheels would lead to a useful discussion on this branch of the subject. The usual want of uniformity in the main features of the carriage portion of the rolling stock was then commented upon; and it was considered that this variety not only increased the cost of manufacture and of maintenance, but was often the cause of accidents, and frequently contributed to render them disastrous. The author thought that the carriages should be nearly uniform in size, and that the buffers should in all cases be the same height above the rails. The longitudinal beams should be in the same line throughout, be strong in themselves, and the framing securely braced. The present coupling in the centre should be increased in strength, and the whole attachment between the carriages should be such as to render a train in effect, as far as practicable, as one carriage, with a certain amount of flexibility; so that in the event of collision the carriages should retain their position, instead of rising upon one another; and if an axle or a wheel broke, the crippled carriage should be partially borne up by the neighbouring carriages until the train could be stopped.

On the question of management, after some remarks upon the speed of trains, it was shown that by punctuality, both in the time of starting and in the rate of running, safety, so far as human foresight was concerned, was insured. The system of working the traffic of a railway by allowing an interval of time between the trains was deemed unsatisfactory, and far inferior to the system of an interval of space. The accidents arising from the irregularity of excursion trains were then alluded to, and it was remarked that if, during the summer and autumn, the ordinary trains were run at lower rates of fares, the traffic would be increased, as the public would feel greater security in travelling. The difficulty in running coal or mineral trains to a fixed time-table might be met by a more general use of the electric telegraph, and by a better system of signalling arrangements. During the seven years, from 1854 to 1860, inclusive, eighty-eight accidents happened from inefficient signals, of which fourteen occurred in 1860. In some cases, especially at sidings, there were no signals; in others they were defective in form, or were improperly placed. It was desirable that junction signals and points should be worked simultaneously by one man, and at junctions, separate main and distance signals should be provided for each line. If the system of working the traffic by the electric telegraph was generally adopted, and the line was divided into sections, so that a train should be prevented from entering any section until the preceding one had passed to the section in advance, collisions would be impossible, except those liable to arise from disregard of the signals; and a proper interval would be secured between the trains, in spite of unpunctuality. As the want of a means of communication between the engine-driver and the guard, or conductor, had frequently been experienced, and as plans were in daily use on several lines, there was no reason why it should not be adopted on all. To render it fully effective, the guard, or conductor, ought to start the train from each station by means of that machinery, so as to prove that it was in working order. Owing to the general high speeds and heavy trains, it was of the utmost importance that ample break power, capable of being applied in the least time, should be provided with each train. It was a question how far a regularly distributed retarding force, acting at the same moment on all the wheels, might not be preferable to a concentrated force applied at particular points. By the system of "continuous breaks," the employment of several men with each train was unnecessary. It had also another advantage, that a train was more under control, and could be stopped in a shorter distance. The negligence of servants, arising from their ignorance or inefficiency, was next adverted to, and it was thought to be due to the pay being too low to command the services of men of intelligence, steadiness, and self-reliance. Frequently they were insufficient in number, leading to overwork, and instances were on record in which engine-drivers had been employed for seventeen hours daily, and in some cases for twenty-six and thirty hours continuously.

The author observed that Government interference was not likely to render railways safer, or more available to the traveller; and that it would be better to rely on the consideration and calm reflection of those immediately interested in these enterprises, especially as from the heavy expenses attendant on accidents, directors and shareholders would naturally desire to render this mode of travelling as safe as possible.

The second paper read was also on "Railway Accidents," by Captain DOUGLAS GALTON, R.E., F.R.S., Assoc. Inst. C.E.

It was stated that the length of railway communication opened in the British Isles at the end of 1860, was 10,433 miles, upon which 163,435,678 passengers were conveyed in that year. From official returns it appeared, that during the seven years ending the 31st December, 1860, there were 116 passengers killed, and 2,832 injured, from causes beyond their own control. From the sums paid by railway companies for compensation, it was calculated that an insurance of one twenty-fourth part of a farthing per passenger per mile would, on the average of all lines, cover the cost of railway accidents. It had been found impossible to obtain reliable information, as to the number of coach accidents in this country. But the returns of the "Messageries Impériales" showed, that in a series of years, the number of passengers killed and injured, from causes beyond their own control

was one in 28,000. From the latest comparative returns, the number of passengers killed and injured was, on British railways, 1 in 334,000; on Belgian railways, 1 in 1,600,000; on Prussian railways, 1 in 3,000,000; and on French railways, 1 in 4,000,000. The greater comparative safety of foreign railways was traced to differences in the condition of the traffic and of the management, as well as in the habits of the people.

In endeavouring to elucidate the question, whether any of the accidents which had occurred could have been prevented by reasonable precautions, the first point which arose was, the extent to which the amount of traffic on the several lines influenced the number of accidents. The general averages thus obtained showed, that lines of small traffic were comparatively safe. But as traffic alone did not determine the number of accidents, it was necessary to analyse the causes in detail; taking, first, those which could not be guarded against, and, secondly, those which were within the control of the management, or working staff. During the seven years before referred to, 534 accidents to trains had been reported upon by the Inspecting Officers of the Board of Trade, in which 2,912 passengers were killed or injured. In many of these cases there had been more than one contributing cause, but the majority might be thus tabulated:—

	Number of Accidents reported upon.	Number of Sufferers.	Cases in which the Accidents could not be guarded against.	Cases in which the Accidents were due to Causes within the control of the Management.		
				Attributable to the Works or Rolling Stock.	Attributable to the system of Working.	Negligence of Inferior Servants.
Accidents from Engines and Carriages leaving the Rails, or Fractures of Machinery	135	313	59	98	15	17
Collisions of every description	319	2,532	16	222	219	183

These figures showed that a large proportion of the so-called accidents were due to preventable causes. Those arising from the fracture of axles and tyres, and from engines and carriages leaving the rails, were less than one-half of the number which could not have been guarded against. But out of the 319 collisions, only 16 were attributable to purely accidental causes, whilst 183 were assigned to the negligence of inferior servants, and 120 to the manner in which the traffic was conducted, and which ought not, therefore, to have occurred.

With regard to the first class of cases—accidents which could not have been guarded against—the author remarked, that the best form of tire for a railway wheel had not yet been definitely settled. The wheels and axles could scarcely be said to be mechanically satisfactory; the form of break in use was also imperfect. Although simple negligence could not be entirely prevented, yet in several cases the negligence had been attributable to the defective arrangement of the company, in permitting pointmen and engine-drivers to be habitually over-worked. Those accidents which arose from trains passing on to a wrong line through facing-points, might not have occurred if an indicator had been attached to the points, to show in which direction they were set. The comparatively small number of accidents from negligence alone afforded strong evidence of the efficacy of the direct responsibility of the inferior servants. A few instances were then cursorily alluded to, in illustration of those accidents which were wholly or partially attributed to defects in the condition of the railway, or the vehicles, or in the absence of the requisite auxiliaries to safety, such as signals, breaks, &c. It was observed, that it was not for want of good rules that accidents occurred, but for want of a continued enforcement of those rules, and a close examination into the details of the manner in which the traffic was worked.

The discussions which had taken place on this subject in Parliament, both in 1853, and again in 1857, were then considered, and the conclusion was arrived at, that freedom from railway accidents was not to be obtained by Government interference, but by an effective and responsible internal management, which would enforce the greatest punctuality and care in working the traffic, and maintain the strictest discipline amongst the servants employed.

The existing law affecting railway companies as carriers was then alluded to; and attention was next called to the principle of compensation for injuries sustained. Lord Campbell's Act being specially cited as the Parliamentary recognition of that principle. It was said that this Act removed a technical difficulty in the way of recovering compensation, rather than gave a new right to compensation. The money payment, thus provided, operated as a punishment, and tended to prevent the commission of careless acts. Compensation might, therefore, be looked upon, partly as a penalty upon the Company for its corporate carelessness, and partly as a remedy to the sufferer for the injury received. If viewed as a remedy, it should be such as to tend to prevent a recurrence of the act for which punishment was awarded. It should, therefore, depend on the degree of blame which attached to the management for the accident, and it should be equally certain and just in its operation. In its aspect as a remedy, it should be easily recoverable by the sufferer. As at present levied, it did not properly fulfil either of these conditions, for reasons which were stated. Assuming that such a maximum amount was fixed upon as would fairly compensate the generality of passengers, according to the class in which they were travelling; and assuming that it were made payable in the case of every accident which occurred beyond the control of the passengers, without there being any obligation to prove negligence, the author was inclined to think that the fine would be rendered more certain in its operation, but that as a preventive the effect of the alteration would not be appreciable. The true remedy against railway accidents lay, in the author's opinion, with the railway companies themselves. Improved management would be greatly assisted by placing at the head of each railway a director of adequate capacity, responsible to the Board for the management of the concern, who should be required to devote the whole of his time to its interests, and be paid in proportion;—by giving the chief officers of the railway control of, and making them responsible for, the several departments, so that they might be held answerable for the results; and by providing a gradation of responsibility throughout all the employés. Improvements in the machinery, and system of working might be promoted by the formation of an Association amongst railway companies, embracing the objects of the association between the German railway companies, and of the association between manufacturers, near Manchester, for the prevention of boiler explosions. It was doubtful, however, whether such an association could become of any practical utility in this country, unless it assumed the form of an association for the purpose of mutual insurance against accidents, managed by a Board of railway officials, chosen from the associated companies.

At the Monthly Ballot the following candidates were duly balloted for and elected:—Messrs. W. Henderson, W. H. Mills, A. Samuelson, C. I. Spencer, M. O. Tarbotton, and T. Waring, as members; and Messrs. C. C. Adley, It. G. Coke, W. Dunlop, G. Pownall, and S. L. Tomkins, as associates.

OPENING OF THE INTERNATIONAL EXHIBITION.—*Punch* says—"By a notice in the *Gazette*, we learn that the five Commissioners charged with the inauguration of the building designed as a Temple of Industry, Science and Art, are as follows:—Mr. Fairbairn, Mr. Faraday, Mr. Richard Owen, Mr. Alfred Tennyson, and Mr. Daniel Maclise. The report that the ceremonial was to be under the superintendence of a soldier, an archbishop, and some lords, is contradicted, and the above list appears in ample vindication of the good sense of the Directors.

ARCHITECTURAL MUSEUM.

AS we briefly announced in our last, the Rev. Lord ALWYNE COMPTON delivered a lecture, on April 8th, in the theatre of the South Kensington Museum, "On Encaustic Tiles and Tile Pavements." The lecture was illustrated by many drawings of tile patterns, and of tile pavements to be found in various edifices throughout the country, and the chair was occupied by Mr. A. J. B. BERESFORD-HOPE, the president of the Architectural Museum.

Lord ALWYNE COMPTON, having been introduced to the meeting by the president, said he had been requested by the Committee of the Architectural Museum to give a lecture on encaustic tiles and tile pavements. When first asked he was unwilling to accept the invitation, first, because it was a dry subject, although any antiquarian might make an object of antiquity interesting by wandering far away from it. In that point of view, tiles might be made interesting in reference to the heraldic theory of ornament, and in some cases might have an effect on history, but he wished to speak of tiles chiefly on their own account. The second reason for being unwilling to accept the invitation of the committee, was that, some years ago, he had the pleasure of giving a lecture on the same subject when the Institution assembled in a garret in Cannon-row, and since then he could not say he had added much to his knowledge on the matter. He should speak of encaustic tiles first in an antiquarian point of view, such as studying old churches simply for their own sake; the practical view was how they were to make use of them in their churches and secular buildings. In examining any subject in an antiquarian point of view, the first thing the antiquary wanted was his date, without which his inquiry was of no value at all—he must first know the dates of his examples. In fixing the dates there were many difficulties. They might go into an old church, such as the cathedral church at Gloucester, where there were a great number of tiles, but, on seeing a single pattern, it was very difficult to say to what date it belonged. He thought the first step in settling the date of tiles was to classify the tiles into sets, that was, a class of tiles of a given date and of the same manufacture. In arranging tiles in classes there were two or three things to be borne in mind. The first thing to show the tiles belonged to a certain class was that of their being used in the same original pavement. All the tiles occurring in a particular arrangement were put down, he presumed, at the same time. When he found a great number of tiles coloured and in the same arrangement, he assumed they were of the same date and of the same manufacture. But there were exceptions to that assumption; there were cases where one tile of a set had even been met with while the others were not, from which it might be thought the manufacturer had gone on making one particular kind of tile. It was clear, therefore, that tiles having the same arrangement might yet be of different dates. The similarity of patterns was another way of fixing the dates and the manufacture of tiles. When they found in a church thirty or forty patterns, and other thirty or forty more all generally having a similar character, they might conclude they were of the same date, and by the same manufacturer. Having arranged the tiles in classes of the same date and by the same manufacturer, the lecturer proceeded to point out on the diagrams tiles of various classes or groups. Having got the tiles into classes, the next thing was to date them, and there were various ways of fixing the dates. First, there were a few tiles that had got the date on them, as at Gloucester. There were other tiles which were originally intended to be erected as a border to a wall, dated. There were tiles in Devonshire having dates, one of them being 1708. Then, when there was no date on the tiles they could sometimes find out the date by the armorial bearings; but sometimes tiles were found without any armorial bearings, yet clues were found to distinct dates. But heraldry on tiles was of great use in fixing the dates. He next came to the question of the patterns for the fixing of the dates of tiles; it was not a very satisfactory one, but still it had much to do with the matter. Another mode by which dates were fixed was, examining inscriptions upon tiles. Another mode of finding dates was by examining carefully the portions of the building where the tiles were found. Such were the various modes of dating tiles,—first, from dates actually on them; secondly, from armorial bearings; thirdly, from inscriptions; fourthly, from the patterns; and, fifthly, from the buildings in which the tiles were found. Adopting this mode of examination, the rev. lecturer explained, by means of the drawings on the wall, the probable dates of a great number of tiles found in various buildings, as at Salisbury, Winchester, Westminster Abbey, various parts of London, Exeter, Romsey, York, Leicester, Hampshire, Coventry, Bristol, and some other places. In some of the buildings the same pattern occurred again and again, but still of some patterns there was great variety, there being some slight difference in the design. The lecturer then referred to the drawings on the wall, and fixed the probable dates of tiles occurring in Sussex, Buckinghamshire, Bedfordshire, Ely, Gloucester, Malvern, Devonshire, and various other places throughout this country. He wished next to speak of the arrangement of the tiles; and in arranging the tiles it was found that there were a great many examples of fragments of pavements and of incomplete ones. As to a small room, it was usual to enclose it with tiles of one pattern; but, when the room was larger, more patterns were introduced (which he explained by reference to drawings of tiles found in various parts of the country, and from which it was shown that the divisions of the three panels in a room were very different in different places). Then, as to the pavement of a whole church or cathedral, in that case a very peculiar pattern ran from column to column, and the whole of the aisles were richly paved. The whole of the pavement was next sub-divided (the mode of doing which his Lordship explained by reference to the drawings by which the lecture was illustrated). The rev. lecturer, in the course of his observations on this part of his subject, observed that the green tiles of Mr. Minton combined most beautifully with red ones, and explained drawings of a number of pavements found in different churches; first, of specimens having a square of one pattern, and afterwards of pavements of a later date in which were found several patterns in the squares. Another mode of arrangement, the lecturer pointed out, was that of having the tiles cut out and put together, as at Ely. There were two or three ways of laying down new pavements. The first was to copy an old pavement, and in laying down pavements it would be found that a mistake often committed was, that tiles of different dates were laid down in the same pavement, which, of course, made them incongruous. To put down a pavement in 1862 of different tiles and dates was a perfect absurdity, and that was an error that arose from not copying. The next method was to combine old pavements, and that was what he should strongly suggest to architects and others who designed pavements to do. Mr. Shaw had published some useful information on this subject, and he (Lord A. Compton) had combined tiles in this way for friends. The third way of doing a modern pavement was to invent it, and they might invent a tile, and

might invent a pavement. But he thought the best way to advance in pavements, as in other architectural matters, was to begin by careful copying. That was what was done years ago, and we now could see fine original works in Gothic monuments in London and in cathedral churches, works which were essentially original, but they were the works of men who began by carefully studying the works of the ancients. As to the question of the colour of tiles, the lecturer remarked that green, black, buff, and red, were four colours which in combination were exceedingly beautiful. But, besides those, what he might call China colours were used, white, blue, green, and yellow, different from the first mentioned. (He referred to drawings of specimens of such tiles at the establishment of Mr. Maw.) Great care was required in the arrangement of colours, especially where white lines were introduced, as they caught the eye very much; much skill and care were required in the matter, so as to produce a good effect. Unless the tints were arranged in a pleasing way, the whole would not combine satisfactorily.

On the motion of Mr. BERESFORD-HOPE, a vote of thanks was passed by acclamation to Lord Alwyne Compton for his excellent lecture.

LONDON DIOCESAN CHURCH BUILDING SOCIETY.

THE annual meeting of this society was held at Willis's Rooms on the 10th inst., the Bishop of London presiding. The report, the adoption of which was moved by the Earl of Ellesmere, stated that in the last year the society had aided in establishing eight mission chapels and mission rooms. In the short space of 10 years the population of the metropolitan districts had increased by 440,798, according to the last census. The Ecclesiastical Commissioners were now fully prepared to recognise the claims of those parishes in which they held property, according to the intention of a recent Act of Parliament; there were, however, but few London parishes in which the Commissioners had property. The receipts of the society during the year had been £7,577 odd, of which £5,176 was on account of the general fund, and £2,401 of the Mission fund. In addition, a legacy of between £2,300 and £3,000, would soon be received. The grants made by the society during the past year had been unusually large—viz., £8,996 as compared with £6,885 in the previous one. Nine new churches had been consecrated since the 1st of May last, and five temporary churches had been opened. The parishes in which new churches had been consecrated were St. Pancras; Islington; St. James's and St. John's, Westminster; Tottenham; St. John, Paddington; Spitalfields, and Hampstead. The temporary churches and missions-rooms which had been opened were in the parishes of West Ham, Ealing, St. Martin-in-the-Fields, St. Gabriel's, and Bromley-by-Bow. Works were in progress or in contemplation in 24 parishes. The diocese of London contained a population of about 2,500,000, and was increasing yearly at the rate of nearly 50,000. There are in that diocese three parishes with populations exceeding 35,000; four with between 30,000 and 35,000; five with between 25,000 and 30,000; six with between 20,000 and 25,000; sixteen with between 15,000 and 20,000; and thirty-two with between 10,000 and 15,000. The total provision for public worship was less in Middlesex than in any other English county. One hundred new churches at least were even now required. Were this number erected, it would still be necessary to build about fifteen churches every year to provide for the thousands annually added to the population. But the number built yearly, taking the average, was only eight. Thus the deficiency is growing greater every year. The Bishop of London stated that the character of this Society was essentially practical, and that it was not by exciting speeches or crowded meetings that it made its way. In eighteen years, during the episcopate of Bishop Blomfield, £266,000 was subscribed for the precursor of the Society, of which £80,000 was specially contributed for Bethnal-green. Seventy-eight new churches were by those means built in the diocese. There was collected from local sources £270,000, making a total of considerably more than half a million. No diocese, he submitted, could dispense with such an institution, certainly not that which increased in population by 50,000 a year and which had added half a million since the census of 1851.

Among other speakers at the meeting were Archdeacon Hale, Canon Wordsworth, the Rev. A. W. Thorold, and Mr. Beresford-Hope. Resolutions were passed to the effect that the results of the last census rendered more than ever apparent the urgent necessity for extending and strengthening the parochial system among a population increasing with such unexampled rapidity as that of London, and that the present system of the Diocesan Society, embracing as it did a complete scheme for meeting the spiritual wants of every class, although having special reference to the interests of the poor, was eminently calculated to meet the necessities of the case, and deserved largely-increased support from all the Churchmen of the diocese.

CHELSEA SUSPENSION BRIDGE.—Sir J. Paxton having asked the First Commissioner of Works if there was any truth in the rumour that the traffic over the Chelsea suspension bridge was restricted by the police, on account of some defects in the structure, and if the bridge would furnish safe accommodation for the traffic arising from the Exhibition and the Royal Agricultural Show shortly to be held in Battersea-park, Mr. Cowper said that Mr. Page when he designed the bridge intended the light traffic to go over one portion of it, and the heavy traffic over another. He arranged the roadway for light traffic by placing planks of oak upon bitumen, that bitumen resting upon a concrete of cork and bitumen, thus making an elastic roadway. Mr. Page considered that if the heavy traffic were to pass along that roadway it would damage it. He, therefore, required that all heavy carriages should go upon the trams of iron which were laid along the two sides of the bridge. With reference to the other question he (Mr. Cowper) had no reason to doubt that the bridge would furnish safe accommodation for any traffic which might have to pass over it at any time. It was true a question had arisen as to whether the bridge was fitted to bear any vast load which might by possibility come upon it. Mr. Page had not, in fact, provided for such a load as other persons of high authority thought ought to be provided against. His (Mr. Cowper's) opinion was, that the bridge ought to be strengthened; but, at the same time, he had no reason to doubt that it would be strong enough to carry any amount of weight that would be brought upon it under ordinary circumstances. He should not like to have a dense crowd packed upon the bridge, nor would it be desirable to allow troops to march across it, but it was capable of bearing the ordinary traffic.

THE POST OFFICE.

WE need make no apology for wandering somewhat from our usual course in recording here some interesting information on the Post-office, given by Mr. Commissioner Hill at the Royal Institution on the 4th instant.

The ancients were destitute of any provision for the transmission of letters. German writers attribute the first formation of a post to the Huns Towns, and this method of communication was adopted by the Teutonic knights during their wars in Lithuania. But although letters were carried by the early posts, their chief object was the transmission of passengers and despatches. The next chief advance was the line of posts established by Maximilian through the Tyrol. Then Charles V.'s line from Vienna to Brussels. England, however, as late as the time of Henry VIII., had no established post, and letters were sent by messengers on foot or on horse. It was Charles I. who established, by proclamation, the Post-office Royal, appointing Mr. Thomas Wetherings as his postmaster. The loss incurred by the establishment was £3,400 a year, and yet the lines were few and far between. When the national troubles began the monopoly was questioned, but the Parliament, however, transferred it to themselves. Postmaster-General Pridaux, in 1642, improved and extended the system, and not only rendered it self-supporting, but even drew from it a profit. In the early part of the last century the Government were applied to permit the transmission of letters for Warwick direct, instead of through Coventry. But as letters then were charged by distance, the concession was refused, on the ground that the letters paid 3d., whereas they would only pay 2d. if permitted to go direct.

In 1683 Robert Murray, of London, established a post for the delivery of letters six or eight times each day near the Exchange, and four times in the outskirts of the metropolis, the Royal Post-office having made no provision whatever for London intercommunication. Afterwards this London delivery was joined to the Post-office. The lines up to 1784 were very few, when John Palmer, proprietor and manager of the theatres of Bath and Bristol, struck with the slowness in the post transmitted on horseback, which was outstripped by stage coaches, devised, with great skill, a variety of expedients for increasing the speed of postal communication. No sooner, however, had he revealed his plans than they were received with mingled feelings of disgust and amusement by the authorities, who stigmatised his scheme as impracticable. Fortunately, however, he had to do with a minister (the younger Pitt) "who trampled on impossibilities;" and to Palmer remains the glory of having removed innumerable obstructions. In 1784 the first mail-coach ran from London to Bristol. Two years after this, Palmer, when his plans were only in partial operation, had another struggle for their further adoption, and was defeated. But the ministry, although they gave up the inventor, kept the invention. From time to time, however, Palmer's claims were urged before Parliament by his son, and in the end £50,000 were awarded to him as compensation—a sum which at least acknowledged the right of the applicant. Some of the statements made in this discussion were amusing enough. "Mr. Draper objects to the mail-carts as travelling too fast; considers that passengers only going on business should travel at such a rate, namely, seven or eight miles an hour; before Palmer's time, the post travelled at three and a half miles an hour, which, in his opinion, left nothing to be desired."

Palmer also objected strongly to the constant robberies of the mail, and urged the economy of arresting such outrages. One prosecution alone cost £4,000. But the "guard" was objected to on the ground that "he would have to be waited for at every ale-house." Palmer found a net annual revenue of £150,000, and left the office in the receipt of £1,500,000; such were the effects of the speed and regularity infused into the department by his means. Macadam also, by his improvement in roads, aided much the improvement of postal communication. As the postboys had been outstripped by the mail-coaches, so after a time the Government mail again lagged behind the vehicles horsed by private enterprise, and the number of contraband letters sent by them became enormous. In one instance, 1,100 letters were seized in the warehouse of one of the London carriers, which, however, were liberated immediately on a fine of £500, on account of the injury which, it was alleged, would accrue to the commercial world by their detention, the stipulation being that they should be forwarded by the post of that night. From Palmer's day, however, although straitened by high rates, the Post-office remained a respected institution. In 1837, Mr. Rowland Hill, then Secretary to the Commissioners for the Affairs of South Australia, proposed his plan, that of conveying all letters under half an ounce for a penny, which hence has received the appropriate designation of "The Penny Postage." Hitherto all letters consisting of two pieces of paper, however small, had been charged with a double postage, and if treble or quadruple, so in proportion; and not only were letters thus assessed, but they were also charged variously in proportion to distance. Mr. Rowland Hill struck an average on the best data he could procure, and found that letters could be conveyed for that trifling sum. Both parties of the State alike regarded the scheme as not only extinguishing all profit, but as entailing a ruinous subsidy for its support. Not that Mr. Hill, however, left his plan without valuable supporting arguments and facts.

Previous to 1837, the Post-office had been the subject of investigation, and the result was a formidable pile of blue-books, of the information in which Mr. Rowland Hill availed himself to answer objections. The number of letters transmitted each year, however, was not known in the Post-office. Mr. Hill had first estimated them at 88½ millions, but being enabled to correct his data, had ultimately reduced the total to 79½ millions. The Postmaster-General returned them as from 42 to 43 millions, a number far too low, for the gross revenue being some £3,240,000, the average per letter therefore would be 1s. 1½d., a rate everybody knew to be obviously extravagant. In 1847, a committee was appointed to investigate Mr. Hill's plan, and the postmaster amended his return to 58 millions, again to 67 millions, and subsequently to 70 millions. The committee, after laborious scrutiny, brought the number to 77½ millions, and ultimately the Post-office admitted 76 millions, which number was finally adopted. The scheme of the penny postage was based on the understanding that there would be an ultimate loss to the revenue of £300,000 per annum, and the number of letters must be increased, according to the Postmaster-General, twelve fold—according to Mr. Hill five fold—to make up the deficit. The soundness of Mr. Hill's opinions have been verified by facts, and the complete success has exceeded the limits of the wildest aspirations. Mr. Hill laid great stress on diminishing the labour of the Post-office officials—first, by means of the uniformity of the rate of postage; and, secondly, by stamps for avoiding the collecting of the postage money. Under the old system the cost had to be registered on the letter. It had to be ascertained whether it was single or double, and as the senders of inclosures were commonly adepts at concealments, it had often to be held up before a lamp; and, lastly, if it

had to travel further than a certain distance the extra rate had to be added. Now, as letters rarely approach the half-ounce, the clerks have very seldom indeed to use the scale.

The principal item of expense to the Post-office was and is the house-to-house delivery. No one would have thought that the cost of conveying a letter from St. Martin's-le-Grand to Barnet or to Edinburgh would have been practically the same, and yet such is the case, the difference not amounting to 1-9th of a farthing. In 1840 the Act for the Penny Postage came into operation. In the country districts at that time it was a common thing to have to go four or five miles to the nearest post-office, and yet England was far better supplied than Wales, Scotland, or Ireland. In 1837 Mr. Hill suggested day mails. Before this letters passing through London, (say) from Liverpool to Dover, Brighton, and other places, were always kept waiting at St. Martin's-le-Grand for fourteen hours. Within the six-mile radius the number of deliveries per diem has been increased to eleven; and within the twelve miles' district there were, in some places, as many as six deliveries. Instead of all letters being sent out from St. Martin's-le-Grand, after having been transmitted there to be sorted, the metropolitan area has been divided into districts, each of which is treated as a separate postal town, and the letters of each district are received and delivered within its assigned limits. Much useless labour is thus got rid of, and accelerated despatch acquired. The lecturer then gave various details, instituting a comparison between the years 1839 and 1861, in matters of postage and in the money-order department, alluding also to the newly established savings-banks.

Of money-orders the total in 1839 was 198,000, amounting to £320,000. In 1861, 758,000, amounting to £14,616,000. The number of letters in 1839 was 76 millions; in 1861 it had swollen to the stupendous number of 593 millions! The average number of letters to each person in 1839 was, in England, 4; in Ireland, 1; in Scotland, 3. In 1861, in England, 24; in Ireland, 9; in Scotland, 10; giving a general average of 20 to each individual: thus showing the social advantage of the change. The weight of letters carried in 1839 was 758 tons. In 1861 it was 4,300 tons. The average daily mileage in 1839 did not exceed 54,000 miles. In 1861 it had risen to 149,000 miles, or six times the circumference of the globe. The officers employed in 1839 were about 8,000. In 1861 they were 25,473; in addition to which there was a large class of others engaged for a portion of time. The gross revenue in 1838 was £2,350,000. In 1861 it was upwards of 3½ millions, and the million and a half of net revenue of 1837, when Mr. Hill published his plan, stood restored! Such are some of the results of the Penny Postage. With correspondence still increasing, whether we be in peace or at war, each revolving year adds to the measure of success; and however rapid these strides, and the spread of the new system throughout the civilised world, the Post-office no longer regards itself as perfect, and suggestions for improvement are welcomed, not, as of old, frowned away.

THE EMBANKMENT OF THE THAMES.

ON the motion of Mr. Cowper the Select Committee on the Thames Embankment Bill has been nominated as follows: Mr. Cowper, Sir John Pakington, Sir M. Peto, Sir J. Shelley, Lord R. Montague, Sir J. Paxton, with five members to be added by the committee of selection.

A deputation from the vestry of the parish of Chelsea waited, by appointment, on the Chief Commissioner of Works, to urge upon him the desirability of having the embankment of the Thames continued from Westminster to Battersea-bridge, and the Low-level Sewer carried under it. It appeared from the statements of Mr. Tite, M.P., who introduced the deputation, and of Mr. Finch, that some years since Parliament voted a large sum of money for the embankment of the Thames at Chelsea, as an aid to local subscriptions for the same purpose, but that, as the latter were not forthcoming in the proportion stipulated for by the legislature, a sum of from £30,000 to £40,000 was paid back into the Exchequer. They thought if that sum were now placed at the disposal of the Metropolitan Board of Works it would enable them to continue the embankment of the river in connection with the Low-level Sewer from Westminster-bridge to Battersea-bridge, and so obviate the proposed discharge of the sewage of the neighbourhood into the Thames, after going through the process of decolorisation at Cremenore, as it was objectionable that any foreign matter should be allowed to find its way into the Thames. The construction of the works in question would, they urged, be a great improvement to the neighbourhood; and, as Battersea-bridge is a dangerous nuisance, they suggested that a new bridge connecting Oakley-street with a road right through Battersea-park, would, by bringing Clapham and that district into direct communication with the public institutions at Kensington, make the Government property productive.

The Chief Commissioner, in his reply, stated that in spirit he fully concurred in the views of the deputation, but he felt sure Parliament would not re-vote the money except upon the original condition that the neighbourhood itself should contribute towards the expense of the work; and with regard to the proposal for the erection of another bridge, it was not likely to be entertained, especially as the traffic over the one lately erected was not sufficient to pay a fair interest upon the cost of it.

Mr. Finch reminded the right hon. gentleman that Parliament had by a subsequent Act abandoned the principle that the vote of the House of Commons should be aided by local contributions. The parish of Chelsea would, if it had parliamentary powers to do so, willingly aid in the undertaking; but as the work would be a benefit to the public and a benefit to the Board of Works, it ought not to be delayed, but constitute part and parcel of the main scheme.

The Chief Commissioner fully agreed that the present was the time to move in the matter; but as the case of Chelsea differed from that of the Strand and Fleet-street, and had no excessive traffic of which to be relieved, he did not see how any portion of the coal dues could be applied to the work of embankment there.

At the weekly meeting of the City Sewers Commissioners, held on Tuesday, a report was brought up from the General Purposes Committee, stating that they had examined the Thames Embankment Bill (now before the select committee in the House of Commons for consideration), and in reference to such of its provisions as relate to the proposed new street from Blackfriars to the Mansion House, they had had their attention drawn by the surveyor to certain lateral streets connected therewith, and it had been suggested that endeavours should be made to obtain an improvement in each of the said lateral streets in the manner shown in plans which had been laid before them, and they were of opinion that it was desirable that the surveyor should be instructed to attend the Select Committee in the House of Commons to explain the same.

REMOVAL OF ST. THOMAS'S HOSPITAL AND THE CHARING-CROSS RAILWAY.

ON Tuesday a numerously-attended meeting of the governors of St. Thomas's Hospital was held in the large room of that institution, Sir JOHN MUSGROVE, Bart., in the chair, supported by the Right Hon. the Lord Mayor, the Earl of Leven, Mr. Tite, M.P., Sir J. Hennie, and others, to receive the report of the grand committee, which called the attention of the governors to the course that had been pursued with reference to a suitable site for the new hospital. The committee deemed it of primary importance to ascertain what quantity of land would be required to enable the governors to build a hospital on the most improved plan; and, after instituting many inquiries, and finding that the extent of the site of the new French Hospital—Hôpital de Lariboisière—supposed to be the best in existence, occupied from twelve to thirteen acres, exclusive of officers' residences, &c., and having in view the rapid increase of building within ten miles of London, the committee arrived at the conclusion that not less than from fifteen to eighteen acres ought to be secured for the proposed new hospital; and if practicable, even a larger quantity, in order, as far as possible, to prevent interference with the ventilation of the hospital by future building operations. Assuming it to be indispensable that the proposed site should be healthy as respects soil and elevation, and easily accessible to the afflicted poor, all the requisite information and statistics on those matters had been prepared and laid before the governors. The committee had not lost sight of the interests of the medical and surgical officers, or of the medical school; and where these interests were opposed to the more important interests of the poor, the former were considered subordinately to the latter, and it was the opinion of the committee that the interests of the medical officers of the school would be best served by placing the new hospital in a situation that should be found most conducive to the well-being of the patients. The committee had had under their consideration not fewer than forty-four sites, and the following nine were under consideration, viz., three at Camberwell (at Bushy-hill, Brunswick-square, and New-road respectively), two at Hatcham (the property of the Fishmongers' Company and Mr. Hardcastle, Kent-road, Ord.), Lewisham (Mr. Boyd), Walworth (Royal Surrey Gardens), and Walworth (Fishmongers' Company). The sites were not all equally eligible. The Brunswick-square, Camberwell, and Old Kent-road sites were, perhaps, the least eligible. All varied much in price, not merely as regarded first cost, but also as regarded the probable additional outlay in purchasing the surrounding buildings, to secure sufficient ventilation and suitable access. The committee, while submitting this statement, thought it right to remind the court of the effect which the selection of any particular site by the court would probably have in enhancing the price.

After considerable discussion on the points in the report, it was proposed by the CHAIRMAN, seconded by the Right Hon. the LORD MAYOR, and carried, that the report of the grand committee be referred back to them to continue their negotiations and inquiries as to the site and other arrangements for the new hospital and report thereon.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.

At the meeting held on the 10th inst., Mr. JAMES B. WALTON, Vice-President, in the chair, Mr. FRANCIS CAMPIN, President, read a paper "On Single and Continuous Straight Girders."

After a few preliminary remarks upon the impulse given to the progress of bridge building, by the introduction of wrought iron as a material for that purpose, the author proceeded to explain a simple and practical method of proportioning the flanges of straight girders. The amount of strain upon any part of a straight girder might be calculated to the greater nicety by formulae deduced from mathematical investigations, which, however, are generally too complicated to be practically available.

The curve of strain upon a girder simply supported at each extremity is a parabolic segment which, however, may be closely approximated by a circular segment, hence the least area of any section of the flanges may be measured on the ordinates of a curve drawn as follows:—

Find the area at the centre of the girders, from which point lay off to scale at right angles to the girder an ordinate representing such area; then describe a circle, passing through the extremities of the ordinate and line of girder. It is desirable that the vertical scale of areas be as small as possible in proportion to the horizontal scale. The area of either flange

at the centre, including loss by rivets, may be found from the expression, $0.0313 \frac{wl^2}{d}$

where w = load in tons per foot run, l = space in feet, d = depth of feet, the result being the area in square inches.

One span of a continuous girder may be regarded as virtually divided into two or more parts, a central part acting as a girder supported at each end, and limited in length by the points of contra-flexure, which part may be treated exactly as any ordinary single girder, as described above, and one or two end parts, of which each acts as a girder, fixed at one end and free at the other, bearing a uniform load w per foot run, distributed over its length, and a concentrated load at its extremity, equal to half the total load on the central part of the girder. The area at the point of fixture being found for either flange from the

expression $\frac{Wx}{8d}$, where W = total load on half beam, and on central part, d =

depth of girder, x = distance of point of contra-flexure from point of support = length of half beam. All that remains to be determined is the value of x , which corresponds to a minimum area of the curve of strain.

The author then explained the process of finding x , which gives for a beam fixed at both ends $0.215l$, and for a beam fixed at one end and supported at the other $0.25l$.

In the case of a continuous girder, the values of the x 's are assumed first as equivalent to one of the above quantities, and then reduced to give an equality of area over the points of support, whichever span such area is calculated from.

The author then proceeded to find the actual saving from the use of continuous girders, and, from a calculation of numerous existent cases, found that it sometimes amounted to 25 per cent. of the weight, averaging about 18 per cent.

These results were obtained from an empirical formula, for the weight of metal in a

bridge, supposing single spans to be used, it is $\frac{10,000}{b \cdot l^{2.25}}$ giving the weight in tons, b = the

breadth, and l = the span, both in feet, the quantity 2.25 being found from the expression,—

$$n = \frac{\log l - \log l'}{\log w - \log w' + \log b' - \log b}$$

in which w, b, l, w', b', l' , are the weights, breadths and spans for two cases, $n = 2.25$ was the mean result of a number of solutions of the above equations.

MANCHESTER CATHEDRAL.—Among other bequests of the late Mr. George Faulkner is one of £8,000, for restoring Manchester Cathedral. The cost of its restoration was some time ago estimated at £10,000, and about £2,000 has been raised by subscriptions.

Reviews.

Chambers's Social Science Tracts. W. and R. Chambers, London and Edinburgh.

WE have received the fifth number of this manual for the working classes. Its subject is Building Societies, and it contains at length a lecture delivered before the Architectural Institute of Scotland, by Mr. W. Chambers, of which we gave a condensed report at page 241 of our present volume.

The Messrs. Chambers are always working in the right direction.

Canada: a brief Outline of her Geographical Position, Productions, Climate, Capabilities, Educational and Municipal Institutions, Fisheries, Railroads, &c., &c., &c. Fourth edition.

THIS pamphlet, issued from the Bureau of Agriculture at Quebec, is intended for circulation "in the hope that Canada, as a distinct and important portion of North America, may thus become better known." It gives detailed and valuable information as to the position and extent of Canada, its natural advantages, resources, minerals, fisheries, government, population, laws, municipal and educational institutions, religion, soil, value of land, free grants, land regulations, the condition and prospects of the new settlements, climate, routes through the province, trade and revenues, wage, outfit, railways, protection to emigrants, &c., &c.

Persons intending to emigrate should possess this pamphlet, together with one For the Information of Emigrants, dated from the Government Emigration Office at Quebec.

A List of the Principal Newspapers Published in the United States and Canada. Gun and Co., American Agency, and the Reading Room, 10, Strand.

IS neatly printed, in a convenient form, and is so far observed very complete.

Mitchell's Screw Piles and Moorings, with Johnson's Patented Improvements, and their Applications. By FREDERICK JOHNSON, C.E.

THIS pamphlet gives a brief outline of the principle of the screw pile, and an account of some recent improvements in its form, together with instances of its application in the construction of lighthouses, beacons, piers, and jetties, bridges, viaducts, &c., including the Portland Breakwater. The form of the screw is shown by a woodcut.

The Ecclesiologist.

OUR contemporary in the April Number gives a view of "Karileph's Church"—i.e. Durham Cathedral as erected by Bishop Karileph. The paper accompanying the view was read by Mr. Robson, before the Yorkshire Architectural Society. There are also two plates containing a plan, sections, and details of Deerhurst Church, Gloucestershire, with a history of the church. "Foreign Gleanings" notes, among other works, the restoration of the west end of St. Peter's, Louvain, doings at Maestrecht, Aix-la-Chapelle, and other places. We have already given an article on the Medieval Court at the Great Exhibition.

The Art World.

WE have received the first part of this new periodical, which we notice in its second Number makes "common cause with the Art Journal" in its late unwarrantable attack on the Building News and Builder, with reference to the International Exhibition building. The new journal pompously says, "In the silence (!) of the architectural journals the art journals must speak out;" nor are we better pleased by observing in the sixth Number a criticism of the Architectural Exhibition, which is, with the exception of three lines, simply a reprint, in large type, and without acknowledgment, of what has already appeared in our pages.

Architectural Sketches: Ecclesiastical, Secular, and Domestic, in Worcestershire and its Borders, with Historical and Descriptive Notes. By J. SEVERN WALKER, hon. secretary to the Worcester Diocesan Architectural Society. Vol. I. Worcester: Deighton and Son. London: Masters and Co.

THE objects and scope of Mr. Walker's "Sketches" is briefly to make better known the architecture of Worcestershire, which, as he remarks, is but little known in comparison with that of others. New and restored churches, parsonages, schools, and labourers' cottages, will be given, together with facsimiles of scarce old prints and drawings, representing buildings now destroyed or modernised. The historical notes will be compiled, but the author will hold himself alone responsible for the architectural descriptions and remarks, which we have little doubt will be prepared with great care. The present volume contains, executed by the anastatic process, and it must be remarked, not with equal success, illustrations of St. John's Church, at Hagley; St. Michael's, and "The Lodge," at Elmley Lovett, the latter one of the last half-timbered structures remaining in the county; an elevation of a portion of the chancel screen, St. Mary and All Saints, Hampton Lovett; Old Bewdley Bridge; St. Kenelm's Church, Clifton-upon-Teme; Homme Castle and Woodmanton, both at the same place; sketches from Knightwick and Dodenhall; White Ladies Aston Church; St. Michael's, Crofton-Hackett; Beauchamp Lodge, a half-timbered structure erected in 1850, and Roadway Hill Cottage, both at Highnam Court, which, by the way, is in Gloucestershire.

We may hope that Mr. Walker will be encouraged to continue his work to some length; no doubt a few shortcomings as regards the illustrations will not be observable in future volumes.

Correspondence.

JOINERS' WORK IN LONDON AND LANCASHIRE.

SEN.—In the Review of last Saturday the following occurs:—
"A COSMOPOLITAN.—The important letter of a foreman builder upon 'Joiners' Work in London and Lancashire' will positively appear in our next number."
As that might lead you to believe that I had addressed my letter to the editor of that paper, I write to inform you that I have not done so.
April 14th, 1862.

A COSMOPOLITAN.

DECISIONS IN THE COURTS.

ARCHITECTS' RESPONSIBILITIES.*

Louch v. Crawford; Crawford v. Louch.—*Londonerry Assizes.*—These cases involved, in the first instance, a claim by an architect, Mr. Fitzgibbon Louch, of Derry, for £262 11s. for professional services, and in the latter a contra demand by executor of the deceased client for damages sustained to a property by reason of an alleged mistake committed in the laying out of some recently erected houses thereon.

It appeared from the examination of Mr. Fitzgibbon Louch that he is an architect, resident in Derry for the last five or six years; had conversation in latter end of 1859 with the late Mr. Crawford about building; Mr. Crawford asked plaintiff's opinion as to the best mode of laying out a square; he had plans previously from Mr. Tait, of Edinburgh, and Mr. E. W. Godwin, architect; Mr. Crawford said plaintiff's ideas met his views best; asked his charges; plaintiff told him the same; Mr. Crawford requested plaintiff to commit them to writing (letter of plaintiff, dated 4th November, 1859, stating same, produced). Objected to by defendant's counsel as not being evidence, it not having been signed). Plaintiff made survey of field (map produced); defendant gave great attention to the proposed works; plaintiff was engaged two days in surveying and levelling, a long time in making maps, in all matters seventeen weeks, during which he gave daily attendance, laid off ground in building lots, checked time and payments, excavations going on; plaintiff superintending same and other works during eighteen months (plaintiff detailed the nature of the works referred to); plaintiff was there by the late Mr. Crawford's directions; values services during seventeen weeks at £30; survey at £6 6s. extra; design for laying out a square, £30; staked out thirty-four lots valued in previous item; fourteen attendances on parties about to take lots charged 10s. 6d. each; total, £77s. In June, 1860, was called on by the late Mr. Crawford to design eleven of sixteen houses for north side of square (an elaborate drawing and coloured tracing of same produced); charged thirty guineas; believes same to be reasonable. In October, in same year, received instructions to prepare working drawings for four houses of the terrace; same since erected; gave detailed specifications to Mr. Crawford for carpentry and stonecutter's work (drawings produced); estimated cost, £3,200; fees on same, 2½ per cent., viz., £80, the usual professional charge. Defendant was so satisfied with work that he stated plaintiff had saved him £200; resolved to carry on work by sub-contract; plaintiff would charge £5 per cent. for the extra trouble, and defendant contracted to pay same; plaintiff superintended erection, commenced in January, 1861; late Mr. Crawford died in May, 1861, and continued to superintend until that date, when plaintiff was superseded by the executor and defendant; about £600 had been expended; remuneration for same, £30; claims 2½ per cent. on what was not expended. (Claim for £300 for damages sustained by reason of dismissal withdrawn). The late Mr. Crawford was almost daily in attendance at the work in company with plaintiff; the foreman, Patrick Connor, was selected by Mr. Crawford, but was objected to by plaintiff as not competent for first-class work; plaintiff required a good carpenter, and would not be accountable for Connor's acts; still Connor was retained; plans set forth the proposed range of the houses; plaintiff staked out front line of houses, also the intersection, the rear walls, and stable lane; told foreman that the front line of stakes was front of houses; directed him to excavate, which took a considerable period; average depth, 9 feet; stones and rubbish accumulated, could not, therefore, sight stakes with facility; commenced in January, 1861; discovered on 8th or 10th of April, in consequence of observations by a Mr. Burgess, solicitor, about depth at rear, that a mistake had been made; plaintiff said it was 70 feet; went there with his pupil, Mr. Irwin; discovered the houses had been set back 10 feet, and were not on the line of stakes; Connor was there; plaintiff was very angry; Connor said he thought the line of stakes represented line of area; breadth of stable lane designed 17 feet 6 inches; depth from front to rear, 100 feet; depth of houses, 38 feet; areas, 10 feet; yard, 14 feet; an average of about 4 feet of building work was executed in two houses and none in the other two when mistake was discovered; to remedy mistake at that time would not have cost £51. Plaintiff communicated next day the occurrence to late Mr. Crawford how foreman (Connor) had made the mistake; Mr. Crawford accompanied plaintiff, who pointed out mistake, and insisted wall should be removed; Connor not present; Mr. Crawford asked could it be remedied; plaintiff recommended him either to remove the work, or to leave areas 5 feet wider, as in consequence of excavation he had to put two steps on pathway, and the additional width suggested would obviate that; Mr. Crawford said widen the area 5 feet, and reduce the lane from 16 feet 9 inches to 14 feet; he having examined several stable lanes, and found that width sufficient, Mr. Crawford remarked that his meaning was in centre of gripe, and directed works to proceed, as he would have no difficulty in getting the customary 6 feet allowed him at other side of quick if he built a wall; after said interview, and up to the time of his death, Mr. Crawford visited works frequently; basements of the other two houses were built in conformity with altered plan, to Mr. Crawford's knowledge, who never found fault; Mr. Crawford directed Connor to build area wall; another mistake made by Connor, who left out fire-places. Returning to items in account, plaintiff, in answer, stated he let some of the premises by Mr. Crawford's directions, and claims £2 2s. for same, as agreed. (Other items admitted by defendant's counsel.) Plaintiff received no money whatever, except £23 18s. 1d., in respect of account furnished; used skill to best advantage; produced copy of specification; original given to Mr. Crawford; offered to prepare duplicate when latter got mislaid, but defendant refused access to plans; heard for first time of complaint about 27th September, 1861.

Cross-examination—First business acquaintance with Mr. Crawford was in July, 1859, about survey of Gobaicale property; was paid for that to November following. (Plaintiff here explained items about Castlerock House, and produced drawings and specifications.) Estimated outlay, £400; next the business in hands—viz., Crawford-square; charged £107; per centage is not the scale adopted in such works; plaintiff employed Mr. Milne, a landscape gardener, in April, 1860; Mr. Milne never complained of plaintiff's interference; plaintiff put him away; did not bring him back (letter of Milne here produced undertaking the carrying out of plaintiff's plan as foreman as long as he should continue to employ him); Milne went away in August; plaintiff or his brother certified for his weekly payments during most of that period; accounts at other dates not certified, but may have ordered payment of them personally after examining and noting them; believes the amount expended was about £300; estimates about three weeks' work for a draughtsman in making general elevation and tracing; the four houses built, and for which separate drawings are provided and charged for, are shown on that drawing; plaintiff has been paid 7½ per cent. on outlay when he had to superintend work without a contractor, the additional 2½ being added for additional trouble so incurred; furnished details, some on boards full size, as customary, others, such as trimmings, &c., fully detailed in specification; told Mr. A. Crawford, son of defendant, he had no "complete" copy of specification, but would furnish one if allowed the drawings; plaintiff furnished plans of four houses for working purposes; Connor was employed to superintend the works; Mr. Crawford reproved him for taking too much authority (plaintiff again explained the manner he had driven the stakes; was on ground every day, but owing to the heaps of stones could not see clearly the front line: if he struck out the line properly would expect the foreman to see the line preserved; did not say to Connor "to say nothing about it, that he (plaintiff) would make it all right;" the additional width of 5 feet was given to area, and Mr. Crawford admitted to plaintiff that he considered it a great improvement (map of property produced); map has been altered, but was right before erasures; by scale the dimension 33 feet 3 inches ought to be 34 feet 9 inches, but figures are attended to in preference; was altered in his office, but not by his directions, to make it correspond with the ground; swears positively alterations were not made to blind Mr. Crawford, but to show the houses thrown back 10 feet, and the lane reduced; trench sunk inside foundation in a couple of days.

W. J. Barre—Resides in Belfast; is an architect of ten or eleven years' experience; knows premises in question; heard plaintiff's evidence as to charges; made estimate as to what would be reasonable fees for the services rendered; charges according to time and labour for expenditure under £500 (here explained minimum charges for the various items in the account); gross amount, with reference to the surveys, maps, superintendence of roads, £57 15s.; general elevation of north side £20, taking the drawings on their own merits, and disconnected from the other works; deducted therefrom a proportion of one-fourth for the drawings, as would form basis for a contract, all details included, subsequently fur-

nished for the four houses, and for which plaintiff is entitled to 2½ per cent., or £30 to £32 10; also if plaintiff was required to render the services stated by him, and which were over and above those usually required, £5 per cent. is reasonable for superintendence alone.

Cross-examination—Heard plaintiff speak about seventeen weeks' time expended, and estimated one item accordingly; if not so employed would certainly reduce it; cannot speak as to house agency fees, but would not allow his time to be frittered away without payment if required to give information about lots, &c.; heard plaintiff's statement as to details; does not think his proceeding correct; seeing the way the houses are executed, there must have been either total ignorance on part of foreman, or drawings are wanting; there should be details for various portions, they might have been furnished; wanting these, should deduct £10 from the £30 allowed, and if no specification, would value the charges at 1½ instead of at 2½ per cent.; thinks it possible an architect might not observe the mistake, and still be doing his duty, as he would naturally assume that the man in constant attendance would not deviate from the line of stakes fixed by him; if the stakes were before his eye, cannot conceive why they were not discovered; it was the duty of plaintiff to stake out main building, and the foreman should follow the drawings afterwards; if he received 7½ per cent., would consider it his duty to pay extra attention.

Re-examined—Would not consider himself responsible for the mistake under the circumstances as regards the foreman, enumerated by plaintiff; it showed extreme care on part of plaintiff to stake off other walls besides the front wall; where back line was also staked, cannot conceive how mistake arose; no man that understood his business could have made the mistake that Connor did; wondered that plaintiff had anything to do with such a foreman; believes plaintiff should not be responsible for the act of an incompetent party.

(Plaintiff's and defendant's counsel here agreed to shorten the case by not producing more than one professional witness on either side, plaintiff consenting to withdraw Mr. Williamson, C.E., county surveyor; Mr. J. J. Lyons (proprietor and editor of the *Dublin Builder*); and Mr. J. G. Ferguson, of Derry, architects; and defendant, Mr. Sweeney, C.E., and Mr. Boyd, of Belfast, architect.

Counsel then opened defendant's case, and dwelt on the exaggerated charges made by plaintiff, also on the damage sustained by the property by reason of the deviation, and which defendant claimed to be at the rate of some £7 per house for the sixteen houses designed and commenced.

J. McCurdy (examined)—Is an architect; examined account furnished by plaintiff; would allow two days for surveying—viz., £6 6s. for map; and for design for laying out the square, £10 10s.; for remainder of works, such as superintending road-making, &c., 2½ per cent. on the expenditure of £300—viz., £7 10s.; map for lithograph, £3 3s.; could not give an opinion as to the attendances, thinks it more house agent's duty than an architect's; as to charge of seventeen weeks, does not think time should be computed; for general elevation of north side allows £10 10s.; 2½ per cent. is proper remuneration for drawings, including details, but without them 1½ per cent., as two of each class of house are duplicates; for superintendence alone 5 per cent. is not proper charge under any circumstances, but the total, including supply of plans also; heard of the mistake, and confesses he would feel himself responsible for it were he employed; considers that with the contracted rear a loss of about £7 per annum at twelve years' purchase is incurred for each house of the range; land could only be about 6 feet wide, or a narrow lane; increased width of area is £55 6s. extra cost for the four houses; arch, sustaining steps and landing, has become more slender, owing to being elongated.

Cross-examined—It is not usual business of an architect to lay out grounds, superintend construction of roads, &c.; thinks 2½ per cent. is legitimate charge for such works; did not see the ground before the works were executed; understood that excavations had been made; does not consider plaintiff, as an architect, would be entitled to as much as Milne, the landscape gardener; if it took plaintiff a time one day in the week for 17 weeks, would give him three guineas per week; would say that he is only entitled to the usual superintendence fee if he went there twenty times a day; does know cases where architects were paid by per centage on such works; was paid himself £7 10s. for half an hour each week for three months; if no contractor, plaintiff should have made special arrangement, or should get a guinea each time he inspected, in addition to 2½ per cent.; if acting as foreman, would strike off 2½ per cent. and give him salary of two guineas per week; cannot combine the two characters of architect and clerk of the works; would not express opinion as to charges for attendances; plaintiff was acting professionally in staking front wall; thinks he (witness) would have discovered the error of the ground being thrown back 10 feet; would dislike the steps projecting in front; thinks areas too wide; would not leave upper landing so wide; the arches seem to be shaky; counted excavation in estimate of increased expense of constructing areas (quantities, measured and priced by Mr. Boyd, and checked by witness, were here produced); would have rectified the mistake if permitted; if not, would leave as it was.

John Milne (examined)—Is a landscape gardener; laid out cemetery in Derry; also Crawford-square; plaintiff spoke to him in April, 1860, and said he (plaintiff) wanted to know his charges; agreed to lay out the grounds according to a tracing; got no sections or levels; put up fence and hedge, drained the ground &c.; was paid by Mr. Crawford £2 2s. per week, whether men were working or not; plaintiff had nothing to do with laying out grounds; never complained to Mr. Crawford about plaintiff; gave up the work because he considered he was insulted by plaintiff; went back and finished his work; some pay bills are certified by plaintiff and some are not, as witness went direct to Mr. Crawford; was not under plaintiff's control; laid out the roads, took levels, &c., himself.

Cross-examined—Was there 17 weeks; not as good a job as elsewhere; laid out central square and roads; executed drainage and planting; plaintiff said something he did not like; left him of own accord; was absent at flower-show at Enniskillen; plaintiff gave him instructions as to breadth of roads; never said plaintiff turned him away for being drunk; no man ever saw him so; witness, not plaintiff, kept the time of the men.

Patrick Connor (examined)—Commenced employment at Crawford-square in January, 1861, as foreman mason, for Mr. Crawford; his duty was to take charge of the men and the work; received plans from the architect, Mr. Louch; worked under his directions; wages 26s. per week; Mr. Crawford found materials; plaintiff proceeded to mark out excavations; brought three flag poles; measured from hedge to flag pole; drove down the stakes part of the way; plaintiff directed him to keep 8 feet 10 inches from staked line for front wall; no other stakes laid down; plaintiff did not order to excavate 10 feet outside line; nothing to prevent stakes from being seen; Mr. Burgess was the first person that saw mistake; he remarked narrowness at rear; witness said he thought it was all right; had all cuttings finished before he got a plan; plaintiff came up same evening, and Mr. Burgess spoke of space behind; measured it, and found he (plaintiff) made a mistake; asked witness to say nothing about it, but to add 4 feet to area; Mr. Crawford had not been there; saw Mr. Crawford in two or three days afterwards; on 3rd May, before error was discovered, the walls of all four houses were 6 feet above level of bottom of foundation; would take fifteen masons a month to rebuild; was present when Mr. Crawford had conversation with plaintiff; plaintiff told him he was cutting away hedge, and Dr. O'agan prevented him; nothing said about mistake; Mr. Crawford was only twice on the ground after that; made no remark.

Cross-examined.—Has been long in late Mr. Crawford's service; knew about mistake in week ending 3rd May; did not draw Mr. Crawford's attention to mistake, as plaintiff is a brother mason—(laughter); knows Mr. Irwin; he was not there; his evidence was false; not a stone laid on 10th April; false that plaintiff and Irwin went together at the time named; made no excuse in Irwin's presence for the mistake; had been engaged with stake line before; different architects have different systems; did not know that the stakes marked front wall, but understood it, as expressed by plaintiff, to mean the areas; had not seen plan at that time; saw grounds staked out before; at barracks, under Board of Ordnance; knew about building works and stake line, and if plaintiff had said nothing, would have known it represented line of house; began to excavate in January; no row of stakes or lookspits for the whole sixteen houses; only part—half the distance; they were there a couple of months; not there now; area line had to be extended out 4 feet beyond the pegs; houses stopped in June; about £200 expended to that period, exclusive of excavation.

After a short deliberation the jury found a verdict of one fourth damages in each case, which leaves each party in the same position as he commenced, excepting the costs, to be equally borne, and which are heavy.

* Reprinted from the *Dublin Builder*.

THE PRINCE CONSORT MEMORIAL.

THE committee engaged in raising a fund for a national memorial of the Prince Consort held a meeting at the Mansion-house on Wednesday. It was stated that the fund, up to that day, amounted in the aggregate to about £45,800, of which upwards of £1,000 had been received within the past week alone.

The LORD MAYOR, in reply to a question by Mr. Gregson, said, of late doubts had been entertained whether the block of granite in the quarry belonging to the Duke of Argyll in the Island of Mull, upon which the attention of Her Majesty's Committee of Advice had for some time been concentrated, would answer as to grandeur the purpose of a monolithic obelisk in perpetuating the Prince's memory. Drawings of the stone, carefully prepared, had recently been laid before the committee by the chairman of the Mull Granite Company, from which it appeared that, although it was about 115 feet in length, yet it undulated in places very considerably, so much so that, when lines came to be drawn along it, making allowance for the necessary form of an obelisk, some of those indentations were within the lines, thus detracting from its aptitude for the purpose in view. The company had been at some expense in uncovering it as it lay, and although, perhaps, its precise character and dimensions could only be satisfactorily ascertained by degrees in the process of quarrying, still the defects in its breadth in places to which he had alluded had induced the committee to pause before incurring greater expense in a work which might, after all, prove abortive. The Lord Mayor added he was afraid the great mass of the people of this country had yet to be educated, so to speak, into a thorough appreciation of the grandeur and appropriateness of the obelisk, and especially a monolithic obelisk, for monumental purposes. There were some who appeared to regard the setting up a huge stone for such a purpose as simply symbolical of a barbarous age. With great respect for the opinions of others, he could not help saying he altogether dissented from such reasoning. Besides, it was not until the Egyptians had reached the highest point in their cultivation of art that obelisks became conspicuous features in their style of architecture; and he thought it would have been a glorious thing for England, where a monolithic obelisk worthy the name was utterly unknown, to have made this the occasion for erecting one of imposing grandeur.

TENDERS.

BATH STONE OF BEST QUALITY.—Randell and Saunders, quarrymen and stone merchants, Bath. List of prices at the quarries and depots, also cost for transit to any part of the United Kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

IRONWORKS, BEDFORD.

For the enlargement of the Britannia Iron Works, Bedford. Plans by R. Palgrave, Esq., of Pall-mall, London.

Charles Day	£1,850 0 0	James Francis and Son	£1,649 6 0
William Freshwater	1,825 0 0	John Conquest (accepted)	1,528 7 4
Georga Bryant	1,741 19 0		

SCHOOLS, MANCHESTER.

For the new Catholic schools, at Greengate, Manchester. E. Welby Pugin, architect. Quantities supplied by Mr. S. Marples.

Mr. Eaton's 1st tender	£2,390	Mr. Simpson	£1,754
do. 2nd tender	2,045	Mr. Farrell	1,713
Mr. Heringham	1,900		

DWELLING HOUSE, LINCOLN.

For rebuilding a house on Metheringham Heath, Lincoln, for James Greenham, Esq. Mr. Goddard, architect, Lincoln.

Pattinson	£1,525 5 0	Bavin	£1,248 0 0
Jackson	1,350 0 0	Belton	1,205 17 0
Bavin and Knight	1,334 0 0	Robinson and Hill	1,177 0 0
Calvert	1,322 10 0	Lovell (accepted)	1,159 10 0

WAREHOUSES, SOUTHWARK.

For the erection of nine warehouses, being the second portion of the reinstatement of the Cotton's and Depot Wharf warehouses, Tooley-street, Southwark. Messrs. Snook and Stock, architects.

Lawrence and Sons	£48,800	Rider	£43,560
Lucas, Brothers	46,200	Browne and Robinson	42,750
Lee and Son	45,600	Myers and Sons	41,847
Hill and Co	44,960	Holland and Hannen	41,260
Ashby and Horner	44,000	Trollope and Son	40,873
Cubitt and Co	43,800		

WORKS, (VARIOUS), RIVERHEAD.

For works at Riverhead, for the Right Hon. Earl Amherst. Plans and specification of Mr. Matthews, Reigate.

	Net sum.	Allowed Old Materials.	Total.
George Bennett	£1,418	.. £120	.. £1,538
Worsell	1,421	.. 55	.. 1,476
Grover	1,425	.. 87	.. 1,512
Hender	1,452	.. 130	.. 1,582

Mr. Roberts, Islington, London; declined too busy.
The above five were written to, and have taken out their own quantities. It is a specimen good tendering.

VILLA, BATH.

For new wing to Lansdown Villa, Bath, for W. Douglas, Esq. Mr. W. J. Green, architect.

Samuel Rogers (accepted)

BRIDGE, REIGATE.

For the erection of a brick bridge, with approaches, over the river Mole, at Flanchford, near Reigate, under the direction of Mr. R. B. Grantham, C.E., 7, Great Scotland-yard, and of Mr. John Lees, architect, Reigate, Surrey.

Wm. Bottom and Co.	£2,900 0 0	Barnes	£1,295 10 0
Randal Stap	1,655 0 0	Wesley	1,190 0 0
J. Walton	1,506 11 3	Dalrymple and Finlay	1,110 0 0

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post*. Gold watches, 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enable persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

J. W. BENSON, 33 & 34, Ludgate-hill, 46 & 47, Cornhill, London, E.C. Established 1749.

COMPETITIONS OPEN.

CLOCK TOWER.

HASTINGS.—The Prince Consort Memorial Committee appointed to carry out the above object at Hastings invite architects and others to submit designs for the same. The sum of £10 10s. will be paid for the design approved of by the Committee, which design will then become the property of the Committee. Particulars from Robert Growse, town clerk, High-street, Hastings, to whom designs must be delivered before the 1st May.

CEMETERY WORKS.

CHELTENHAM.—The Burial Board for the borough of Cheltenham require plans, estimates, and general specifications, for the laying out, constructing roads and footpaths, erecting buildings on, fencing in and planting, certain lands purchased by them for a cemetery, the superficial area of which is eighteen acres. The designs must include a ground-plan, showing the sites of the different buildings required, the courses of the carriage-roads and walks, the courses, also, of the drains, the division of the land into the several sectional burial-places, and the subdivision of such places into plots for burial. The plan, also, should show the manner proposed for the ornamental planting of the land. Should the intentions of the designers as to the laying out of the land render it necessary, sections of the earthwork required, and formation of the ground surface as proposed to be made, should be provided, and such other details and suggestions as the competitors may think necessary to illustrate and make clear their designs. Plans, elevations, and sections must be provided for two chapels, dead-house, lodge, gates, and walls at entrances, &c. Specifications must accompany the plans, describing the manner of construction, the class and substance of material in the several buildings, and estimates of their several costs. Plans, specifications, and estimates of the manner of laying out and planting the site, of forming and making the roads and footpaths, and of the character and cost of fencing the site, to be also provided. Plans, &c., may be either for forming and finishing the roads and footpaths, laying out and planting the site, or for fencing the site, or for the chapels and other buildings before mentioned, and the entrance-walls and gates, or the whole of the works, may be combined in the plans, &c., of any competitor; but the Board reserve the right of selection at their discretion from the plans, &c., submitted to them. A premium of forty guineas will be given for the best designs, specifications, and estimates for the whole of the works sent in; and a premium of twenty guineas for the second-best designs, specifications, and estimates for the whole of the works. Should designs, &c., be selected for part of the works only, a fair arrangement as to the premium will be made by the Board, with the successful competitors. The plans, &c., selected to become the property of the Board. The plans, &c., are to be distinguished by a mark or motto, and accompanying them a sealed envelope, having the same mark or motto outside, and within the name and address of the designer, and the terms on which he will superintend and supply his professional services in execution of the works. Plans and particulars of the land may be had of Mr. Henry Dangerfield, borough surveyor. The plans and other documents to be sent to G. E. Williams, clerk to the Board, Public Offices, Cheltenham, on or before the 29th May.

SCHOOLS, &c.

DURHAM.—Plans and elevations are wanted for [schools and teachers' residences, in conformity with the rules of the Committee of Council on Education, at Stockton-on-Tees, Durham. The boys' school to accommodate 250; the girls' school, 200; and the infants' school, 200. Three teachers' residences. Ten pounds will be given for the most approved set of plans. Further information and tracing of site may be obtained of William Skinner, Esq., Stockton-on-Tees, to whom plans, with estimates of costs, must be sent, not later than the 30th April.

LIBRARY AND READING ROOMS.

BIRMINGHAM.—The Free Libraries' Committee of the Council of the Borough require plans, sections, specifications, and estimates for the erection of a free reference library and reading-rooms, lending-library and news-room, and gallery of art, upon the piece of vacant land adjoining the Midland Institute Building, with an elevation uniform with the said building. Intending competitors are requested to send in their plans, specifications, and estimates, under cover to Thomas Standbridge, town clerk, Town clerk's office, Temple-street, endorsed "Plans for Free Reference Library Buildings," on or before the 16th June. Particulars of the accommodation required, and of the conditions of competition, together with a lithographed plan of the site, may be obtained on application.

CHAPEL.

LEICESTER.—A premium of ten guineas is offered for the best design for a Wesleyan chapel, to be built in Leicester, capable of holding 900 persons. Architects wishing to compete may, upon application to Mr. H. Wale, 56, New-walk, Leicester, receive a plan of the site, and instructions and any other information required. The plans to be forwarded, carriage free, addressed to Mr. H. Wale, on or before the 1st May, accompanied with a sealed envelope, containing the architect's name, and bearing a motto corresponding with one to be placed on his design.

CONTRACTS OPEN:

CLUB HOUSE.

DUBLIN.—For intended alterations and additions to the Stephen's-green Club House according to plans and specifications prepared by John S. Butler, Esq., architect. To be inspected at his office, No. 16, Hume-street, Dublin, up to the 23rd of April, on which day proposals are to be furnished.

ASSEMBLY ROOMS.

STAFFORDSHIRE.—For the erection of the Silverdale Assembly-rooms. Drawings, &c., at the Silverdale offices, Newcastle-under-Lyne, size of room 60 feet by 38 feet. Tenders post-paid, to the secretary, on or before the 21st April, 1862, sealed and endorsed "Tender for Assembly-room."

QUAY.

ROCHESTER.—For the erection for the Corporation of Rochester, of a town-quay and landing-place, at the said city of Rochester. Drawings, &c., at the office of Mr. Henry Andrews, surveyor, Rochester. A bill of quantities of the proposed work can be had of the surveyor on payment of fee of 10s. 6d. Tenders to be sent to the offices of Richard Prall, jun., town clerk, High street, Rochester, not later than twelve, noon, on the 30th April instant, sealed and directed to the Mayor, Aldermen, and citizens of the city of Rochester, and endorsed "Tender for erection of Town-quay and landing-place."

WORKHOUSES.

LONDON.—For the erection of imbecile wards, at the workhouse establishment, Mile-end Old-town. Drawings, &c., at the office of Mr. Dobson, architect, 20, Mile-end-road, E. A bill of quantities may be had upon payment of 20s. Tenders endorsed "Imbecile Wards," to E. J. Southwell, clerk, Workhouse, Bancroft-road, Mile-end, N.E., before 1, on Thursday, 24th April.

YORKSHIRE.—For the erection of a new union workhouse, at Wetherby, in the county of York. Drawings, &c., with James Coates, jun. clerk to the Board of Guardians of the Wetherby Union, until the 28th inst. Tenders sealed, endorsed "Tender," and addressed to Mr. Coates, will be received on or before the 28th inst.

OFFICES.

LIMEHOUSE.—For the erection of new offices and board-room, in White Horse-street, Commercial-road East, for the District Board of Works. Drawings, &c., upon application to Mr. Charles Dunch, architect, White Horse-street, Commercial-road East. Tenders are to be delivered at the offices of the Board not later than 12 o'clock on the 5th day of May.

DARLINGTON.—For the erection of Darlington new market, town offices, and clock tower. Plans, &c., with George Dickinson, C.E., Surveyor to the Board, Central-buildings, Darlington, or at the office of Mr. Alfred Waterhouse, architect, Mount-street, Manchester. Tenders to Mr. Dickinson, endorsed "Tender for Darlington Market, &c.," and addressed to the Chairman of the Darlington Local Board of Health, on or before 5th May.

CHURCHES.

MONTGOMERYSHIRE.—For the erection of a new church at Bwlch-y-Ciban, in the parish of Meifod, Montgomeryshire. Plans, &c., on application at the schoolhouse, Bwlch-y-Ciban,

six miles from the Llanymynech station, and nine miles from Welshpool. Further particulars by applying to the architect, G. G. Scott, Esq., 20, Spring-gardens, London. Tenders to be sent in on or before the 22nd April, addressed to the Rev. R. Wynne Edwards, Meifod Vicarage, Welshpool, and endorsed "Building Tender."

BERKS.—For restoring and part rebuilding the parish church of Wokingham, Berks (where there is a junction station of branches of the South Eastern and South-Western Railways). Plans, &c., at the office of Mr. W. W. Wheeler, solicitor, Wokingham, till the 13th. Sealed tenders directed to Mr. Wheeler, on or before the 29th inst.

LANCASHIRE.—For the several works to be done in the erection of St. Saviour's Church, Bacup, Lancashire, of which the foundations are just completed. Plans on application to Mr. Robert Howarth, at Stubbylee, Bacup. Tenders, either for the whole works or for the several portions, must be delivered to Edward Wyndham Tarn, architect, Huddersfield, at Stubbylee, before one p.m. on the 23rd inst.

SCHOOL.

EXETER.—For the erection of Wesleyan school premises, in King-street, Exeter. Drawings, &c., with W. Blackmore, architect and surveyor, 3, Maunsell-terrace, St. David's, Exeter, until the 21st inst., on which day before six p.m., sealed tenders are to be delivered, endorsed "Tender for School."

DWELLING HOUSES, &c.

CHIPPING NORTON.—For alterations and very considerable additions to a residence at Chipping Norton. Plans, &c., at the offices of Messrs. Gibbs, Thompson, and Colbourne, architects, Stratford-upon-Avon, until the 23rd inst., where the quantities, &c., may be had on payment of 10s. Tenders to Messrs. Tilsley and Wilkins, Chipping Norton, on the 23rd April.

KING'S LYNN.—For the erection of three first-class, four second-class, and four third-class houses, at Hunstanton, according to plans, &c., by Mr. Butterfield. The plans, &c., may be seen at the office of Mr. J. S. Valentine, C.E., 17, Parliament-street, Westminster, or with Partridge and Edwards, solicitors to the Hunstanton Building Association, King's Lynn; or copies may be forwarded on prepayment of 21s. Tenders, stating a separate amount for each class of house (marked "Tenders for Building at Hunstanton") to be delivered to the solicitors on or before the 23rd inst.

GLoucestershire.—For the erection and completion of a villa residence, with stable and coach-house, proposed to be built near Stroud, Gloucestershire. Drawings, &c., at the offices of Messrs. Franklin and Clissold, architects, Stroud. Tenders to be delivered to Messrs. Franklin and Clissold, on or before the 28th inst.

FARM BUILDINGS.

BURTON-ON-TRENT.—For alterations and additions to farm-buildings on the estate of Sir Henry De Vaux, bart., near Burton-on-Trent. Plans, &c., on application to the tenant, Mr. Winnall, Calves Craft Farm, Roslinton, near Burton-on-Trent. Sealed tender must be delivered to Messrs. J. and J. Girdwood, farm architects, 49, Pall-mall, London, F on or before April 26th.

POLICE STATION.

DEVON.—For the erection of a police station, &c., at Holsworthy, Devonshire. Plans, &c., with Henry Ford, clerk of the Peace, Castle of Exeter, and at the office of Mr. A. Coham, Clerk to Justices, Holsworthy. Sealed tenders, endorsed "Tender for Holsworthy Police Station," to be sent to Mr. Ford, on or before the 29th April.

RIVER WORKS.

CAMBRIDGE.—For the repair of the walls of Baltsbite Sluice (about three miles below Cambridge), and for supplying the same with new oak doors and floodgates for the Sluice Pen; new bridges over the floodgates and overfall, and other works. Specification with Clement Francis, Clerk of the Conservators, Cambridge. Sealed tenders to Mr. Francis, on or before the 30th inst.

ROADWORK.

CHIPPENHAM.—For the repair of the Chippenham turnpike roads, about 17 miles, for a term of years from the 1st day of June next. Specification at the office of the clerk, and copies furnished at stationer's charges. Sealed tenders, stating terms, must be delivered to the clerk, before twelve noon, on the 25th inst.

RESERVOIR.

FYLDE.—For the construction of a reservoir, upon the Grizedale Brook, about three miles from Garstang, and near Seorton Station, on the Lancaster and Preston Railway; and a reservoir near Wootton-lane Ends, about three miles from the Kirkham Station of the Preston and Wyre Railway, for the Fylde Waterworks Company. Plans, &c., and all information obtained at the office of Mr. T. B. Foster, C.E., 23, John Dalton-street, Manchester, from whom specifications and forms of tender can be obtained on payment of 10s. for each reservoir. Tenders must be sent in to Mr. T. A. Wilkinson, the secretary of the Company, at the Fylde Waterworks Office, Kirkham, not later than the 28th inst. The reservoirs will be let in separate contracts.

KENT.—For the construction of a high service reservoir near the "Star Windmill," Chatham, for the Brompton, Chatham, Gillingham, and Rochester Waterworks Company. Further particulars may be obtained, and the plans, &c., inspected, by application at the Company's offices, Military-road, Chatham, or at the office of J. Pilbrow, Esq., engineer to the Company, 34, Great St. Helen's, London, E.C., where also specifications, conditions of contract, and forms of tender may be obtained upon payment of 5s. Tenders (properly endorsed) must be sent in, addressed to the directors, at their offices, Chatham, on or before the 22nd April.

RAILWAY WORKS.

ALVA RAILWAY.—For the construction of the whole works on the line from Cambus station of the Stirling and Dunfermline Railway, to Alva, being about 3½ miles in length. The whole to be let in one contract, which is to include the construction of the stations and station buildings connected therewith. The rails, chairs, spikes, and the iron girders for the bridge over the Devon, will be supplied by the railway company. The plans, &c., are at the secretary's office, Alva, or at the office of James W. Stewart, Esq., C.E., 73, George-street, Edinburgh; and duplicates will be furnished to intending officers. Sealed tenders, addressed to the secretary, and marked "Tender for Works," must be lodged at his office on or before the 26th inst.

CALEDONIAN RAILWAY.—For the construction of the Stonehouse Branch, about 4 miles 38 chains in length. Plans, &c., at the office, in Glasgow, of Mr. George Graham, the Company's engineer, where duplicate schedules and blank forms of tender may be had, price one guinea. An assistant engineer will attend at Stonehouse, on Friday, the 11th, at 12 o'clock, to accompany intending officers over the line. Sealed tenders, addressed to the secretary, at Glasgow, must be lodged with him on or before 28th April.

DARLINGTON.—For the erection of a cast-iron portico at Darlington Station, on the North Eastern Railway. Plans, &c., and further information, on application to Mr. Prosser, architect, Newcastle. Sealed tenders, marked "Tender for Darlington Station," to be sent in to the Secretary not later than the 23rd inst.

FERRYHILL.—For the erection of sheds over the platforms, &c., at Ferryhill Station, on the North Eastern Railway. Plans, &c., and further information, on application to Mr. Prosser, architect, Newcastle. Sealed tenders, marked "Tender for Ferryhill Station," to be sent in to the Secretary, not later than the 23rd inst.

EXETER.—For the erection of a roof for the new station at Exeter, of the Bristol and Exeter Railway, having an area of about 500 squares. Drawings, &c., at the Engineer's Office, Bristol Terminus, to the 5th of May. Sealed tenders to be addressed to the Secretary, A. Moore, Esq., on or before the 6th May.

SEWERAGE.

BRIGHTON.—For constructing a main sewer and outfall in the Brunswick-square and terrace district. Plans, &c., at the office of R. G. Suter, Esq., the surveyor of the Commissioners, at their rooms in Brunswick-street West, 11, 12, 13. Tenders in writing, sealed, and endorsed, "Brunswick-square and terrace drainage," are to be delivered on or before 5 o'clock on the 30th April, at the offices of Messrs. Hill and Fitzhugh, solicitors, Brighton.

GASWORKS.

KENT.—For the performance of the work required in the extension of their retort-house and coal store, and alterations in other parts of the works, at the Gravesend Gasworks. Plans, &c., at the Company's Works, Gravesend, and further information of Mr. J. Church, C.E., Chelmsford. Forms of tender may be had from Messrs. Southgate and Son, secretaries, Gravesend, and tenders are to be sent or delivered there on or before the 30th instant, marked "Tender for Building."

THE METROPOLITAN BUILDING ACT.—A bill to alter and amend the Metropolitan Building Act of 1855 has been brought into Parliament by Colonel Sykes and Admiral Walcott. Its chief provision is that the rules of the Act of 1855, limiting the cubical dimensions of buildings shall not apply to any structure to be used wholly for the construction of boats by machinery, erected at a distance of more than three miles from St. Paul's Church. Such buildings, however, are to consist of one floor only, and not to be of larger dimensions than 216,000 cubic feet.

THE BLACKFRIARS RAILWAY BRIDGE.—Mr. Hartridge has inserted in the paper of business for the next Court of Common Council the following notice of motion: "That this court assent to the proposal of the London, Chatham, and Dover Railway Company to erect a bridge of five arches, or spans, across the River Thames, near Blackfriars-bridge."

THE RIGHT TO RING CHURCH BELLS.—A curious case having reference to the right of ringing church bells has been heard in the County Public Office, Leicester, when Mr. D. Waite, farmer, of Thurmby, appeared to answer a charge preferred against him by the Rev. J. K. Redhead, vicar, of having, on the 27th ult., been guilty of violent and indecent behaviour in breaking open the belfry door of the parish church. By the evidence it appeared that from 1857 it had been the custom of the churchwardens of the village, on the occasion of Lord Stamford's hounds meeting there, to ring the church bells in honour of his lordship. When, however, the hounds met on the 17th ultimo, the vicar felt it his duty to interfere, and ordered the bells not to be rung, with the understanding that if his commands were disobeyed he should take legal proceedings against the parties offending. Accordingly, on Sunday evening (the day before the hounds met), he nailed down the latch of the belfry door, besides taking the precaution to prevent ingress by locking the door and tying the key in it. At seven o'clock the following morning the defendant gave orders to the parish constable (who happened to be a wheelwright) to open the door, which was done by lifting it off its hinges with a crowbar. The ringers then ascended the belfry, and for two hours or more rang the bells in honour of Lord Stamford's visit. The magistrates dismissed the case.—*Western Morning News.*

PUBLIC BUILDINGS.—Mr. B. Cochrane has given notice that on Tuesday, the 29th of April, he will move for a royal commission to inquire into the state of public buildings erected by Parliamentary grant during the last twenty years; also into the state of houses which were rented for the public service, and to inquire whether, by adopting any more comprehensive plans, greater public convenience, economy, and unity of design might not be attained.

CONSERVATIVE LAND SOCIETY.—The thirty-eighth quarterly meeting was held at the offices, 33, Norfolk-street, Strand, on Tuesday, the 8th inst. The quarterly report gave a very satisfactory account of receipts, amounting to £17,821 17s. 11d. in the quarter, showing an increase over the corresponding quarter of last year of £3,093 11s. 9d., and an increase over the Christmas quarter of £4,292 16s. 7d. The total sale of land to Lady-day amounts to £304,885 10s., being an increase to the extent of £42,235 15s. 7d. over the returns to Lady-day, 1861. Two allotments have already taken place this year of the Queen's-road estate, Tonbridge Wells, and the two estates at Newark-upon-Trent. Another allotment is fixed for the 30th inst., when the last portion of New Roehampton-park estate, a fourth portion of the Round Hill Farm estate, Brighton, with houses in occupation on the Round-hill-crescent, and ground rents at Battersea and North Bow, will be offered to the members. The directors have been, and are, in negotiation for various estates in different parts of the country, and are looking out for an eligible purchase in or near London.

THE "BUFFS" MEMORIAL WINDOW IN CANTERBURY CATHEDRAL.—The east window of the Warrior Chapel in Canterbury Cathedral has recently been filled with stained glass, dedicated by the officers, non-commissioned officers, and privates of the above regiment, to the memory of their brethren in arms who fell in the Crimean campaign, 1855-6. The idea suggested in all the subjects is typical of conquest—No. 1, Abraham offers Isaac—victory of faith. No. 2, Israel conquers Amalek; Aaron and Hur holding up the hands of Moses—victory by a sign from God. No. 3 (the centre), our Lord crowned and bearing the banner of the Resurrection is met by the spirits in prison—victory over Death and Sin. No. 4, Gideon conquers Midian, himself the least in his father's house—victory by obedience. No. 5, Jehu conquers Ahab—victory by force of arms. In the upper part of the centre light is shown fully the regimental flag, and at its base the regimental badge, with the motto, "*Veteri fronscescit honore*," upon a rich mosaic groundwork, composed of the oak. At the base of the side lights, and also in the upper tracing opening, the heraldic badges in connection with the Buffs are frequently introduced, viz., the Rose and Crown, the Dragon, the grenade, and the White Horse of Hanover. The inscription, incised in marble and surrounded by a border let in with coloured cement, is as follows:—"To their brethren in arms who fell in the Crimea, 1855-6. The east window of this chapel is dedicated by the officers, non-commissioned officers, and private soldiers of the Buffs. (3rd, or East Kent Regiment.) A.D. 1862." The memorial is by Messrs. O'Connor.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged if authors or readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

W. R. J. F.—Has sent a portion only of promised paper.

K. F. S.—Below our mark.

M.—Yes, if suitable.

Mr. G.—We should accept and pay for such an article if suitable; but to a stranger we can make no promise.

Subscriber.—We fear that you are too late, but will see what can be done.

T. K. T. B.—Shall appear.

Messrs. F. and H.—Similar complaints constantly reach us; remonstrance seems unavailing.

A CONSTANT READER.—Thanks for good opinion of our labours.

M. Z.—Send photograph, and subject shall be engraved.

Mr. S.—N.—We cannot interfere in disputed accounts.

R.—Declined with thanks.

Q. B.—Send address and proof shall be forwarded.

H. S. W.—No doubt you have a claim for compensation; take good legal advice. We cannot advise you at length in these columns.

* * * All communications to be addressed, *The Editor of the BUILDING NEWS*, 20, Old Boswell-court, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 18 to 21, Old Boswell-court.

Advertisements are received up to six o'clock on Thursdays.

MR. PEABODY'S GIFT TO THE LONDON POOR.



NE of the most munificent instances of private benevolence on record has occurred within the last few weeks in the metropolis of this country. It will be fresh in the recollection of our readers that Mr. Peabody, an American merchant of high standing, and one who has for many years been actively engaged in business in London, has conveyed to trustees the sum of one hundred and fifty thousand pounds, to be devoted to the improvement of the condition of the London poor.

This benefaction is distinguished from ordinary charities in many ways. It consists of such a sum of money as ordinarily is never devoted to charitable purposes, except in the form of a legacy, and this sum is voluntarily set aside by the donor during his lifetime. It is further not the gift of a successful man to his native town, or of a fortunate emigrant to the country of his adoption, for Mr. Peabody is not an Englishman, or a naturalised Englishman. His native town has already benefited largely by his liberality, and he is, we are informed, preparing to return to his own country, after having spent the active years of his life in ours. Lastly, there is in the objects to which this benefaction is to be applied much of large-minded liberality, and an entire absence of either sectarian prejudice or personal bias. We hear

of nothing except that a large sum of money is placed in the hands of a few trustees, with the general directions that they are to employ it for the good of the poor of London in any way that may seem to them most advisable, without prejudice for or against any sect, class, or nation; and without any special mode of employing the fund being prescribed. All this is so different from the ordinary methods of rich men, who mostly hold their money as long as life lasts, and then subtract from what they leave to their heirs a sum or sums to be devoted to specific objects or specific charities, churches, or institutions, that we cannot fail to look upon it with surprise, and ought unquestionably to recognise it with marked approval.

It is right to add, before going further, that Mr. Peabody makes one suggestion in his memorandum descriptive of his intentions with regard to this fund; and that this suggestion, not only on account of its being the only special destination pointed out for any portion of the money, but also on account of its great value and good sense, will be sure to have the greatest possible weight with the trustees. The special object alluded to is the *improvement of the dwellings of the poor*.

Mr. Peabody must well know, if he knows at all, the state of the London poor, that the deplorable condition of their dwellings is one of the unhappy circumstances which tells most against their health, their comfort, and their morality. Perhaps there are other evils as great or greater, and as much crying for removal, but it is not everything that money can do. Money cannot buy justice for the oppressed; cannot gain the attention of the powerful to the cry of the weak; cannot right social wrongs; cannot do anything towards making good a deficiency of kindness, or honour, or truth, or sense of duty. Money, however, can buy land and build houses, can procure the best advice and secure substantial and efficient comforts in what it builds, and it was therefore wise in making a grant of money to point out this as one of the fields in which it is to be employed.

With regard, however, to the whole detail of how this object is to be furthered, and to the entire plan with this one exception, all is left to the judgment of the trustees; and we cannot but feel anxious to know what their decisions will be, and what course they will pursue. The capital and the interest, if misapplied, will become a premium on idleness, beggary, vice, or, if wasted, will present the sad spectacle of a noble opportunity lost, while, well appropriated, this fund will be likely not only to do great good, but to form a model upon which other such funds will be based, and possibly a nucleus to which other sums of money will be added.

The sum of £150,000, if invested to yield 5 per cent., would represent an annual income of £7,500, and supposing this was decided upon as the better course to pursue in the management of the fund, it is clear that a very considerable annual amount of good might be done, especially if the trustees were to take the course of assisting private or other efforts in place of originating schemes of their own. This plan has been pursued with marked success by certain benevolent societies. Few, if any, societies have made a moderate income represent so extensive an influence and so much good in their own way as the various church and chapel building societies. The Incorporated Church Building Society, the various diocesan societies, and sundry such societies among various bodies of dissenters, have all followed very nearly the same method. They have some of them occasionally originated and built new churches, but ordinarily the practice of all of them has been to content themselves by giving a liberal donation towards the funds of church-building undertakings started by private individuals, and in doing this they have afforded the benefits of their experience and acquaintance with the undertaking in addition to their pecuniary help; and, further, have uniformly insisted on such a control over the plans and the carrying out of the building as shall tend to secure

that the work should be substantial and the accommodation comfortable and complete. Added to this, some of these societies have a loan fund, and are prepared to advance money to assist these undertakings in addition to their contribution.

It is notorious that the encouragement afforded by the operations we have just been describing has, in numberless cases, occasioned the erection of churches which would not otherwise have been built, and that the professional scrutiny of plans and specifications secured, has, in many cases, prevented mistakes which would have led to unfortunate or disastrous results, had they not been thus detected in time; and the same thing would be true of the operations of Mr. Peabody's trustees, were they to take a similar course.

Let us take for example the case of improving the dwellings of the poor. It would be a wise appropriation of money if, in the first place, all the information accessible were collected and published, including plans of all the most successful labourers' dwellings for cities, and statistics of their success or failure; then perhaps here and there a specimen block of buildings might be erected, or a row of cottages drained, improved and rendered healthy, as examples and experiments; but we apprehend the most extensive good would be done were it known that the trustees would contribute a certain amount, or a certain proportion of the expense in cases where landowners or companies would erect dwellings complying with certain conditions, or would effect certain improvements in defective dwellings. And to this might be added, as in the case of the church building societies already alluded to, further assistance in the shape of a loan.

The objection will, no doubt, occur that this devotion of money, instead of helping the poor, would in reality help house-builders; and to this the only answer to be made is, that probably in no other way could so much be done for the dwellings of the poor with the same amount of money. Building good houses for the very poor, and improving bad houses, is a business notoriously uncertain, and not attractive to speculators, but this assistance would probably cause it to be undertaken in many instances; and, as the trustees might connect with their grant the conditions that each tenement should not be let above a certain maximum rent, and should not be let for infamous occupation, and might retain a legal power of enforcing these conditions, it appears clear that a great benefit might result.

We would, however, suggest that aid should be afforded from this fund for other measures of social improvement which are not touched by legal provisions. There exists already a machinery for the regulation of drainage, but we are not sure how far the improvement of water supply might not be advantageously assisted; and we are quite sure that the establishment of additional baths and wash-houses might be promoted with great advantage, and the opening of reading-rooms or other such places of resort for labouring men would be another measure where help from a fund like this would be invaluable.

Such measures as we have been describing have been already taken, with the best possible results, in many localities where the resources existed for their prosecution, and usually at the instigation, and often also at the sole expense, of the parish clergy, aided by a few of the liberal and benevolent inhabitants; but, in many localities, and those places where the need of such auxiliaries to improvement is the greatest, there is no possibility of establishing anything which makes a demand upon funds—there are not enough resources available; and in such cases as these a liberal subscription and experienced advice would be of the greatest value.

If the discomfort of the dwellings of the poor be one great and radical source of misery, there are two others which combine with it, and for which no remedy of real efficacy has yet appeared. The first is the unskillfulness, mismanagement, waste, uncleanness, in short, thriftlessness of most poor women; the second is the attractiveness to all poor men, and women too, of the public-house and of strong drink.

If the fund we are discussing is administered by persons desirous of striking out a new path for themselves, here is an ample field for them, very nearly unoccupied, and promising the happiest results to those who successfully grapple with its difficulties. We fear, however, that among the things which money cannot buy will be found the secret of teaching poor women how to make the most of their little means. This, when it is done, will be done by the personal exertions of educated women desirous to set right somewhat of the much that is still wrong in spite of our boasted civilisation; and may, perhaps, be aided a little by judicious teaching in schools.

There is, however, a fairer opportunity open for benevolence in the opportunity for taking such measures as shall make a successful attack upon drunkenness and the public-house.

A hundred years ago drinking was more rife in the higher circles than it now is in any grade of society, but the progress of education, and a change in public opinion, have brought a complete revolution to pass. If such a change is possible in one social class it is not impossible in another, and the greatest of all benefits will be conferred upon London and the London poor by any step which tends considerably to diminish the amount spent in gin palaces and common taverns.

We are not intending, in a few words at the very end of an article, to propose a scheme for the diminution of this master vice, but we believe that the key to at least a palliation will be found, if Mr. Peabody or any other benefactor will give working men or other poor people somewhere else to go to than the public-house, and something else to enjoy besides drink. Were a thoroughly unexceptionable class of public music, reading and coffee rooms open, such as would in no way offend the prejudices of working men, and would meet their wants and leave them as uncontrolled

and as free from interference as they are at the public-house, we believe that the better class of men would frequent them at once, and that they might in time effect much towards diminishing the number of the frequenters of public-houses.

What has been said shows the need of great prudence and sagacity in the employment of this charity. These qualities we are willing to hope will be brought to the task of dispensing it, and will, if used right, secure the fulfilment of the intentions of the generous donor.

As to the gift itself, and the liberal feelings which have prompted it, there can but be one feeling, and we are glad to learn that the City of London is taking steps to mark its sense of the recognition due to such an act by the best means in its power—namely, presenting Mr. Peabody with the freedom of the City. It is also somewhat interesting to find that the opinion expressed by the donor as to the first object towards the promotion of which the fund should be appropriated has been fully appreciated by those best able to judge. At a recent meeting of inhabitants of the ward of Portoken held to consider the subject, the following resolution was come to:—"That this meeting, representing as it does one of the poorest districts of London, desires to express its opinion that the improvement of the dwellings of the labouring classes is the great necessity of the day, and likely to promote the happiness and well-being of the metropolis." This is very true, and we hope to see the most sanguine wishes of Mr. Peabody fully realised, and that he may live himself to behold some at least of the good results of his liberality.

ARCHITECTURAL EXHIBITION.*

THE most conspicuous object this year in the Architectural Exhibition is a full-size sepia drawing of a window erected to the memory of the eighth Earl Waldegrave, by Mr. Gibbs, of Euston-road. It has one great advantage over the window itself in having the subject depicted in one tint only; but it has been most injudiciously hung, with a strong light full upon it. In a partially-darkened room its size and the vivid description of its author would have enabled an ordinary imagination to conceive the powerful solemnity of the subject, which Mr. Gibbs has very originally treated. The architecture in Mr. Gibbs' cartoon is not quite correct, but the costume is in keeping with it. In this the artist has shown great skill. He evidently adapted his window to the country church in which it was to be placed. It would be as absurd, he seems to imply, to lay the poetry and refinement of such a subject, or the historical research necessary for educated men, before a country congregation, as it would be to sprout Shakespeare to ploughmen. The child can see in this window his *beau idéal* of a Roman soldier, and plenty of bright colour undiluted by the conventionality of tyrannical schools. With familiar details the artist has successfully appealed to the hearts of the ignorant. He has not worked for the fastidious few, but for the many, who have neither time to seek for, nor ability to understand, the higher qualities of glass painting. Looked at from this point of view, the design surpasses anything which we have lately seen. It is, in fact, only excelled by the window itself. We expected, however, to find it at the International Exhibition. It says much for Mr. Gibbs' modesty that he consents to hang in Conduit-street a work which would have been at the head of its peculiar class even at South Kensington. Personally, we should, as we have said before, preferred to have had the cartoon hung in a darkened room, whilst the painted glass might, to its greatest advantage, have been hung here upon the wall in its place. Opposite to it, over the entrance-door, where it is likely to escape the notice it deserves, is a drawing of an entirely different stamp, by Messrs. Heaton, Butler, and Bayne. The composition of the group and every line of the drapery is conceived in a masterly manner, and drawn firmly in. There is no strained effect—no theatrical clap-trap; but manly, refined power and Christian sentiment. The same knowledge which has guided the hand in drawing the figures has presided also over the minutest fraction of floral ornament. There is only sufficient colour to relieve the figures; but the drawing in this cartoon, as in Mr. Gibbs', may very confidently be accepted as the prologues to the works themselves.

Messrs. Lavers and Baraud also contribute two or three drawings of stained glass windows, but they are on so small a scale, and hung so high up on the walls, that without a step-ladder, which the Committee do not furnish, we are unable to do justice to them. For beautiful colour in stained glass we must turn to the contributions of Mr. J. P. Seddon, from Rheims Cathedral (193, 199). Faulty as the drawing is—and it is even more so in Mr. Seddon's drawings than in the original—the colours and the combinations of them leave the efforts of all modern glass painters immeasurably behind.

Of designs for public buildings in our metropolis, the Exhibition, which heretofore gave us generally several, now affords but one. It is a design, by Mr. C. H. Smith, for an octagonal vestibule, with four porticoes, to the principal Government offices at the crossing of two main thoroughfares. Four sides of the octagon have arched openings, and the semicircular porticoes, with red shafts and Corinthian caps, stand upon a high flight of steps against the others. The view through the arched opening in front is meant, we suppose, to represent Parliament-street; but it resembles that busy thoroughfare about as much as that calm retreat of studious and melancholy men, Dances-inn, resembles Cheapside. On each side of the before-mentioned porticoes, where sentry-boxes and foot-guards would in reality be placed, Mr. Smith has fixed equestrian gilt statues of royal personages. The angles of the openings are chamfered, and in the cham-

fers piled-up figures of Victory and Fame are surmounted by carvings of the Westminster Gridiron. On the internal angles of the octagon small brackets project from the impost mouldings, and bear alternately busts of the lion and the unicorn. They are no longer simply divided by the heraldic shield; an impassable gap here, to their evident bewilderment separates them. The main cornice is arched upwards at intervals to enclose small niches which at that eminence surround the vestibule, and afford accommodation for stowing away some very unprepossessing statuettes. The whole is covered by a coffered dome.

Another gentleman of the same name, but with different prefix, Mr. F. Smalman Smith, treats us to an amusing puzzle in his *Architectural Recollections* of 1851, the chief point in which—as we find from the twelve or fourteen lines of elucidation vouchsafed us in the catalogue—is a column commemorative of "the successful consummation of that great enterprise the International Exhibition." We have to look a long while amongst the vast display of glass roofs which constitute the design ere we discover modestly hidden in convenient indistinctness, the object of so grand a flourish of the author's trumpet; and then, to understand what the fever scratches signify, we have to turn again to the catalogue for the unrevealed excellence of this long-nursed trophy. The four quarters of the world are assembled round the rose, shamrock, and thistle, and British lions guard the gathering. The "crown is represented by a band proceeding from the letter A," and the three kingdoms are united with it in carrying out the project. The four quarters of the world—which we have just announced on the author's authority, were at the base of the column, surveying with curiosity the triple flowers—are, in duplicate, seen at the summit, offering a testimonial to the Prince. "Internal reliefs, frescoes, and stained glass surrounding the central stair, would carry the datum line of the world science and art at this period into future time." Such is the author's account of what appears but a shapeless post; but, in common fairness, we must add that a fraction of the column obtained "honorary mention Class A." A small portion of it only could have been exhibited. If the whole had been shown, together with the author's description, the one stone which leads from opposing qualities might have brought the author's grief, instead of landing him with such distinction twined round his fortunate temples.

The designs for the Hull Town Hall form an important part of the Exhibition. We have contributions from some five or six of the competitors. The prize design, by Mr. Cuthbert Broderick, is placed upon one of the screen and was sent seemingly after the catalogue was compiled. It is a fine Italian design, and consists of two ranges of semicircular windows, ar three-quarter columns, and of a high square tower in the centre of the front. Thus, in general arrangement resembling the Flemish halls, but differing of course from them in the details, high-pitched roof, dormers, ar pinnacles. Messrs. Green and De Villes' design, which gained the third premium, is likewise here. A massive colonnade and balcony along the front is supported upon cantilevers. This, the most striking feature of the design, would, in execution, look heavy in the extreme. The foliate panels between the Corinthian caps in the wings destroy the effect of the carved capitals, besides giving the entablature the appearance of increase and too great depth; still, there are many good points about the design. The architects, in fact, show in another drawing—"design for the Town Hall, Northampton,"—a somewhat similar arrangement more judiciously treated. The columns here properly rest upon solid piers, connected by an arcaded entrance, and appear as component parts of the design instead of as excrescences upon it. The foreign Gothic designs are numerous, but those of Mr. Godwin and Mr. Eddis stand prominently forward from the rest. That of the former gentleman is in the same style as his Northampton design, but it is even more meritorious. There is a triple arcade in front, with statues on small buttress-like columns between the windows on upper floor, having their canopies cutting into the principal cornice. There are towers over each wing, varied in their outline and design. A great superiority over its fellow of Northampton lies, however, in its excellent relative proportion of ground floor and superstructure, whilst its fine picturesque outline and clever detail make us regret that it will exist but upon paper. It is by far the finest work which Mr. Godwin has yet produced. His design for Swansea reminds us of his former inferior work. The windows are cramped by the flat buttresses between them, and the blank arcade is a feature which would entail a good round sum for the disfigurement of the building. There is a fettered look in it which is extremely unpleasant. We long for a bit of blank wall, and if our reader would appreciate the value of this cheap means of decoration, let the look, in passing, at Mr. Lamb's warehouse for the "Consignment and Store Company," 40, and then contrast it with the crowded lines in an adjoining frame; as, for instance, those of the new buildings at Newcastle upon-Tyne. In frame 72 we have another design for the Hull Town Hall. It is a wild production, executed in Mr. Street's familiar manner, but resembling it about as much as a German chromolithograph resembles one of Turner's pictures. The wonder, however, is that Mr. Phipps, who can appreciate Mr. Street sufficiently to copy him, cannot, with such practical as he has had—for we have already noticed his dead copy of that gentleman's best known church—do it better, or see that he fails to do it other than amusingly. The design is on a par with the execution. It is a systemless conglomeration of features which skillful men use effectively but which are fatal in inexperienced hands. Mr. Phipps makes use of similar features to Mr. Godwin, but he lacks equal power to weld them homogeneously together.

Mr. Eddis' design for Hull Town Hall is placed too high to be properly examined, but it has evidently been made in a genuine Gothic spirit, and

* See pp. 210, 227, 265, ante.

is fully equal to the other works in the same style, which the architect elsewhere exhibits.

Mr. Goldie's production for the same building has his usual characteristics—a thorough devotion to Medieval art, which precludes him from dispensing with even those portions which are useless in the nineteenth century. To retain them he would find use for them. Busts are introduced in the spandrels over arcades, and sculpture at the angles over the columns, as in the well-known Doge's Palace.

For an able extension of Gothic art, commend us to the manly work of Mr. Mileham, 175, 176, 180, 184, "a Design for a Museum." It is drawn with marvellous accuracy, and conceived without an atom of trickery or artifice. There is no shower of crockets or bands of coloured material; no flashy display of perky detail or masquerade in old-fashioned second-hand conceits. Mr. Mileham has avoided these seductive syrens, and has produced a work inferior to nothing in the Gallery for the highest qualities of architectural art.

Besides this work of Mr. Mileham, two other students exhibit here their competition drawings; but neither the Design for an Exchange, by Mr. Watson (108, 109), which obtained the gold medal of the Royal Academy in 1861, nor the College of Mr. Ernest George, 268, 271, 276, creditable as they both are to their respective authors, show the purity of style and the free development of it which are conspicuous in Mr. Mileham's work.

We have left ourselves but little space to speak of several other drawings which we had marked for notice: the competition design for the New Opera House at Vienna, is fully illustrated in some badly executed drawings by Mr. Shoubridge. It has an extensive portico, a huge dome, and four towers at the angles of the block. We have no doubt that there were many worse designs submitted, and, we would fain hope, many better.

A residence erected in Yorkshire, in 1856, by Mr. Butler, is exceedingly clever, especially when we consider that it is adapted to an old house. It would, however, be better, we think, without the panels of coloured material.

We are glad to find that the suggestions which we threw out in our article on the Pugin Collection, have been taken in the spirit in which they were made. Mr. E. W. Pugin has removed his own works into the East Gallery, and put in their place additional memorials of his gifted father. This action is the more commendable because Mr. Pugin has taken it with the knowledge that his own drawings could not be hung properly in consequence of the walls being already in some way or other covered. They deserve a more careful examination than they are now likely to get.

REGISTRY OF ORNAMENTAL DESIGNS.

WE learn that the Chambers of Commerce of Birmingham and Sheffield have been engaged for some time in endeavouring to effect an extension of copyright in ornamental designs. It will be seen by the following communication, addressed to the Birmingham Chamber, how far the effort has been successful:—

"Office of Committee of Privy Council for Trade,
Whitehall, April 9, 1862.

"GENTLEMEN,—I am directed by the Lords of the Committee of Privy Council for Trade to acknowledge the receipt of your memorial, praying for an extension of the terms of copyright for ornamental designs applied to works in metal, and supporting your application by the statements of manufacturers personally engaged in the several departments in that branch of trade.

"From the evidence thus furnished it appears that the time occupied in preliminary arrangements, and the preparation of designs previous to the manufactured article being presented in the market, varies from six to twenty-four months. The majority of those by whom these statements are furnished ask that a period equivalent to the time thus consumed may be added to the existing term of protection, thus extending the whole to five years.

"My Lords direct me to acquaint you that, considering a case to have been shown for the expediency of this extension, instructions have been given to the officer at the head of the Registry of Designs, to take the necessary steps for extending the copyrights of all articles in metal included in Class I. during three years, as at present, to five years for the future.

"I am, gentlemen, your obedient servant,

"J. EMEISON TENNENT.
"To the Council of the Chamber of Commerce of Birmingham
and the Midland Districts."

BRITISH ARCHAEOLOGICAL ASSOCIATION.

THE annual general meeting was held on the 9th inst., G. VERE IRVING, Esq., V.P., in the chair.

The report of the Auditors, balance-sheet, lists of Associates elected, withdrawn, and deceased, were read. The finances of the Association were shown to be in a favourable condition; £702 3s. 2d., including a balance from the previous year, had been received, and £530 2s. 6d. paid by the Treasurer; leaving a balance in favour of the Association of £172 0s. 8d. This included the entire payments of the *Journal* for the year, and on account of the first part of the "Collectanea Archaeologica," all receipts upon which have not yet been received. Forty-eight Associates had been elected; twenty-three had withdrawn; ten had died; and three were directed to be erased from the list for non-payment of their subscriptions. Obituary notices of the deceased members, I. Bateman, Lord Braybrooke, W. G. Carter, J. Clarke, Right Hon. C. Tennysou D'Eyncourt, E. S. Lee, W. Newton, S. Leigh Sotheby, G. E. Harcourt Vernon, and the Rev. F. H. Wilkinson, M.A., were read by the Treasurer.

A ballot then took place for the officers and Council, when the following were elected:—President, Sir S. H. Northcote, Bart.; Vice-Presidents, Sir C. R. Boughton, Bart., J. Copland, M.D., G. Godwin, N. Gould, J. Heywood, G. Vere Irving, T. J. Pettigrew, and Sir J. Gardner Wilkinson; Treasurer, T. J. Pettigrew; Secretaries, J. H. Planché (Rouge Croix) and H. Syer Cuming; Foreign Secretary, T. Wright, M.A.; Palaeographer, C. Hooper; Curator and Librarian, G. R. Wright; Draftsman, H. C. Pidgeon; Council, G. A. J. Alger, W. H. Bayley, Dr. W. Beattie, W. H. Black, H. G. Bohn, G. M. Hills, J. Lee, LL.D., E. Levein, M.A., W. C. Marshall, R.A., G. Man, R. N. Phillips, J. W. Previt, Rev. J. Ridgway, M.A., E. Roberts, S. R. Solly, and R. Temple; Auditors, G. G. Adams and G. Patrick.

THE ALBERT MEMORIAL.

THE ordinary fate of men who start on great enterprises unmindful and utterly regardless of the means whereby they can be brought to a successful issue, has befallen the Committee of the Albert Memorial. It has now not only to acknowledge its failure, but to detail to the Royal Lady who commissioned it the various reasons which have produced it. The Queen, suggested through Lieut-General Grey, that an obelisk might be found the most appropriate form of monument provided it be on a scale of sufficient grandeur, and that its base should be surrounded with groups of statuary. There was in this suggestion ample scope for the deliberations of the Committee, but it got a monolithic idea into its united head, and, so huge was it, there was no room for aught else to rest there. It did not pause to consider how a statue of the Prince Consort could be associated with it, without having a secondary position, or how the surrounding sculpture could be combined with a tapering shaft some 80 feet above it. North, east, south, and west, in the three Kingdoms, and in Russian Finland, they sought the realisation of their solitary idea. Their first consideration was not to produce a monument of artistic grandeur, which should impress the character of the Prince upon the mind of the spectator, but a "monolith of approved colour and durability," which should enable the compilers of metropolitan guide-books to inform the curious reader that it was so many feet higher than anything of the kind which ancient Egypt or modern Rome can boast of. Just when the French have become sensible of the folly of transporting their obelisk to fix it amidst sculpture with which it does not accord, our Committee would have led us in the same wasteful and disastrous track. When our sculptors hoped to show to the world that they were capable of recording the high qualities of the departed Prince, when they had an opportunity, and with it a worthy subject with which to redeem our London statues from the contempt so frequently thrown upon them, the Committee confines its attention exclusively to "the question of the possibility of finding a monolith." In vain we have pointed out that more than the sum already subscribed would be swallowed up in transport alone. We have given from the engineer's own book the cost of rearing that in the Place de la Concorde, which is not one quarter the weight of that to which the sanguine expectations of the Committee was directed. It is answered to us by the Lord Mayor that the public requires to be "educated to the appreciation of a monolith." It is a novel spectacle to see a London Alderman, who by rotation sits at the Mansion-house, expound art theories; but he should have known that monoliths were appreciated in England before broadcloth was, and that Britons reared them when they painted their backs and were ignorant of Lord Mayors and Aldermen. Perhaps, however, as a matter of precaution—being about to sit on a committee of taste with the Earls of Derby and Clarendon and Sir C. Eastlake, and to preside at banquets in the Egyptian Hall—he felt bound to read up Egyptian archaeology, and, unexpectedly big with a little information, he must needs deliver himself publicly. The monolith is appropriate, he says, because the Egyptians, at the height of their civilisation, erected them. "What's Heeuba to us, or we to Heeuba?" The Assyrians, at the height of their civilisation, set up the combined forms of a man, a lion, an ox, and an eagle; the Hindoos those of monkey-gods, bulls, Vishnus, and Venuses. Other nations, at the height of their civilisation, have worshipped unknown gods and idols, which would have been just as well unknown. The folly and errors of the old nations are for our instruction, not for our imitation; but why, of all nations, should the Egyptians and their deeds be singled out from other nations for blind imitation? They carved rams, cows, cats, and goats, and consecrated them as symbols of their deities, and reduced mythology to a system; with it and allegory they constructed an impenetrable veil, which concealed religion from the eyes of the vulgar. The foibles and frailties of men have been transmitted by them to us incorporated with the attributes of supreme divinity; and the same heterogeneous mixture of the mighty and the mean is read by discriminating eyes in their architectural works. At an almost fabulous expenditure of men, money, and time, which we should regret to see imitated now, they erected their enormous temples and pyramids; their buildings had sloping walls, huge bolster columns, and deeply hollowed cornices; they adorned them with winged globes and unintelligible hieroglyphics. They did this "at the height of their civilisation," and this, Mr. Cubitt implies, we ought, consequently, to do to show our advanced position. But his dogmatic censure of the opponents to the foolish monolithic idea is not even based upon accurate information. The Egyptian monoliths were not erected to the memory of individuals, and were never even set up singly. They stood in pairs on either side of the entrance to their temples; they were inscribed with historical facts, and in style are inseparably connected with the buildings on the banks of the Nile, which have, happily, their only representative here in the Egyptian Hall, Piccadilly.

These remarks are suggested by the proceedings at the Committee meeting last week. (See page 279, ante). This week we have to record a letter from the Committee with reference to the *monolith*, and the reply of General Grey. The Committee write:—

"We, the members of the Committee appointed by your Majesty to consider the best means of giving effect to your Majesty's wishes in respect to a memorial to his Royal Highness the Prince Consort, humbly beg leave to report to your Majesty the result of our preliminary proceedings with reference to the matters committed to us.

From a letter dated the 19th of February last, addressed by Lieutenant-General the Hon. Charles Grey to the Right Hon. William Cubitt, the Lord Mayor, we learnt that your Majesty had "come to the conclusion that nothing would be more appropriate, provided it be on a scale of sufficient grandeur, than an obelisk, to be erected in Hyde Park, on the site of the Great Exhibition of

1851, or on some spot immediately contiguous to it;” and that, “there would also be this advantage in a monument of this nature—that several of the first artists of the day might take part in its execution, for there would be room at the base of the obelisk for various fine groups of statuary, each of which might be entrusted to a different artist.”

In accordance with the views thus expressed we considered the condition of magnitude in the obelisk to be indispensable.

We could not but be apprehensive that considerable difficulties would have to be encountered in the ulterior arrangement of sculpture round the base, whether near or at some distance, bearing in mind the importance of giving the necessary prominence, in position and effect, to the statue of his Royal Highness the Prince Consort. We resolved, however, without entering on the consideration of this point, to confine our attention exclusively, at first, to the question of the possibility of finding in the United Kingdom a monolith of sufficient dimensions, combining with an approved colour the important condition of durability.

Our attention has, for these reasons, been restricted to granites. In our inquiries we have derived great assistance from the Director-General of the Geological Survey, Sir Roderick Murchison, through whom, with the aid of his correspondents at the quarries at present worked, we have received accurate information on the points to which our attention was chiefly directed. But we regret to say that in most instances the granite rocks so described to us, even when unobjectionable on account of the tint or reputed durability of the material, have not been found capable of furnishing a monolith of sufficient length. We have also to acknowledge liberal offers of materials in comparatively unexplored localities, but the cost of experimental excavations and the uncertainty of the result have deterred us from advising such undertakings.

The only case that has come under our notice in which the various requisites above enumerated may possibly be found to be combined, together with vicinity to the sea and comparative facility of transport, is that of a mass of granite, of a light red tint, in the island of Mull, on land belonging to the Duke of Argyll, who, with great liberality, has placed all such materials on his estate at the disposal of the Committee.

Our investigations have been for some time confined to this locality, and we have to express our thanks to the Ross of Mull Granite Company for the important assistance they have rendered us in enabling us to form an opinion respecting the fitness of the block in question.

The length, which in the excavated portion already exceeds 115 feet, would, we consider, suffice for the intended obelisk. There appears, however, to be reason to apprehend that the width of the stone near the centre would be insufficient, according to the proportions of the most approved ancient examples, to be consistent with that height.

It is also by no means certain that the block referred to has the necessary thickness in those portions which are not yet cleared. An experienced contractor who has examined it has stated that nothing can be affirmed respecting the fitness of the stone “until it be raised and turned out from its present bed.” For such operations a large outlay would be required, and we cannot but hesitate to recommend such outlay while we have no absolute certainty of a satisfactory result.

Although we have considered it on many accounts desirable that a monolith of the required dimensions should be obtained from some part of the United Kingdom, we have not omitted to make inquiries elsewhere. Knowing that large masses of granite of good colour can be procured in Russian Finland, as evinced by various remarkable specimens in St. Petersburg, we have consulted competent authorities respecting the fitness of that material. The replies we have received cannot be regarded as satisfactory, since it appears that the granites in question, however well adapted for interior decoration, have not the reputation of being durable in the open air.

With regard to the important point of expenditure (assuming a monolith to be found in our own country), we consider that, from the variety of estimates we have privately received,—the novelty of the undertaking probably rendering any approach to accuracy difficult,—we are by no means in a position to name a sum that would represent the ultimate cost; more especially as it is the opinion of many that the obelisk would present an incomplete appearance unless the surface were enriched with incised sculpture, on the principle of execution (however different from the representations) adopted on Egyptian obelisks. Without, however, venturing to assign a limit to the entire cost, we conceive we are justified in expressing our opinion that the whole of the sum already subscribed would be absorbed by the obelisk alone.

While, therefore, we see no reason to conclude that success is absolutely unattainable, we believe that it would be accompanied by difficulties and by expenditure at present wholly incalculable; nor can we refrain from expressing our serious doubts whether, even if the mere enterprise were successful, the ultimate effect would be such as to realise your Majesty's just and natural expectations.

Having laid fully before your Majesty the information which we have received, and the inferences we have drawn, we humbly await the signification of your Majesty's pleasure as to prosecuting our present inquiries, or directing them to some other mode of meeting the great object in view.

DERBY.
CLARENDON.
WILLIAM CUBITT.
C. L. EASTLAKE.

Westminster, April 14.

In reply to this General Grey has written:—

Osborne, April 19, 1862.

The Queen commands me to acknowledge the receipt of the report from the Committee named by Her Majesty to advise her on the subject of the proposed National Monument to the Prince Consort.

Her Majesty cannot refuse her assent to the reasons, so clearly and strongly put forward in the report, which induce the Committee to doubt the expediency of any further attempts to find a monolith that would fulfil the conditions on which her Majesty's choice of an obelisk, as the distinguishing characteristic of the proposed monument, mainly depended.

Her Majesty sees, therefore, no alternative but to acquiesce in the abandonment of the idea of an obelisk, and to request the Committee to turn their attention to the possibility of finding some other mode in which the great object in view may be most satisfactorily effected.

Her Majesty's wish is to leave the Committee quite free to recommend whatever may appear to them to afford the best hope of a satisfactory result; and

she would merely throw out as a suggestion whether the opinions of some of the foremost architects of the day might not be advantageously taken as to the means of combining the groups of statuary mentioned in my letter to the Lord Mayor (among which, of course, a statue of the Prince would be prominent) with some other design.

Sir C. Eastlake, &c.

C. GREY.

Now it would seem really, from one sentence in it, that the Lord Mayor had the drawing up of the Committee's report, for, after giving an account of its investigations in the Island of Mull, it speaks of apprehensions that the width of the stone near the centre would be insufficient, according to the proportions of the most approved ancient examples, to be consistent with the height of 115 feet. Now the diameter, which we suppose is meant, of the Egyptian obelisks was about one-tenth of the height; but the groups which it was intended to fix round the Albert obelisk would have altogether changed the character of the erection, and consequently ought to have changed its relative proportions. The error of attempting to out-rival Egypt in mere size, and in ignoring the art attributes of the monument, has, however, been the cause of the Committee's sad acknowledgement of failure. The monolithic idea has hung like a millstone round its neck.

The important point of expenditure at length stepped in to trouble the Committee's deliberations. It is “unable to name a sum that would represent the ultimate cost.” It ought, at all events, to have been able to name the probable amount of the public subscriptions, and to have known that there was a vast difference in ordering a monolith to be hewn from the quarries, squared and sculptured, when labour was almost costless and was directed by arbitrary power, and when it has to be paid for at a higher figure than was ever before paid for it in any country and in any age. Works requiring a large concentration of labour are those which can only be executed when labour is comparatively valueless. We urged this point some time ago, and showed beyond dispute—what was evident to every man unconnected with the Committee—that far more than could possibly be expected from the voluntary contributions of the public would be foolishly sacrificed before an artist's hand could touch the memorial. The Committee now agrees with us that “success would be accompanied by difficulties and by expenditure at present incalculable.”

Having anticipated for some time the conclusions of the Committee, we are not, of course, disposed to quarrel with its tardy acquiescence in our views, nor can we hardly regret the time which has been spent in briaging conviction of the soundness of our views. The reply of her Majesty to the report of the Committee affords us every hope that the matter will now be rightly proceeded with. The monolith is to be left on the island of Mull, and the questionable honour of having reared the largest existing obelisk is still to belong to the Pope, who planted it in front of the Lateran Basilica. Some other mode of achieving the great object in view, more consistent with our powers and the disposable fund, is to be found. More important still is the suggestion that the Committee “might advantageously consult some of the foremost architects of the day as to the means of combining the groups of statuary with some other design.” This very plainly reminds the Committee of what its first proceedings should have been, instead of hunting after a huge block of granite, and talking of educating the public to an appreciation of it. The Queen's letter recalls the Committee to its duty—to advise her on the subject of a monument which shall be worthy in its art display of the Prince to whom it will be reared and of the public who have subscribed for it; and she suggests the course which it had better pursue in order to accomplish her desires.

We have all along said that architects and artists were men regularly educated to conceive such works, and consequently most fit to represent, and to transmit to posterity, in durable material, the character of a public benefactor. The poet does the work in verse, the statesman in the senate, and the Lord Mayor at the Mansion House; but the public monument should be the result of an architect's and a sculptor's labour, unfettered by the fancies of those who have devoted their talents to other, perhaps equally landable, pursuits. A soldier fights a nation's battles, a poet sings and a painter portrays them; a statesman makes her laws and an alderman administers them; but her monuments belong exclusively to architects and to sculptors. If they had always been associated with them as they ought to have, we should not have now to notice as something remarkable the suggestion which her Majesty has so wisely made to the Committee. Now that it comes from the highest quarters it will, of course, be complied with, and the public may confidently leave the subject in the hands of gentlemen, who, by their education and course of thought, are qualified to entertain and competent to give opinions upon it.

BORING ROCKS.—A rock-boring machine, invented by Capt. H. N. Penrice (late of the Royal Engineers), is now being worked by Messrs. Hawks, Crawshaw, and Son, in the Claxton Quarry at Gateshead-upon-Tyne. It cuts a bore of 7½ ft. in diameter at the rate of from 8 in. to 13 in. per hour. This is far in excess of what is being done by drilling, with compressed air and blasting, in the Mont Cenis Tunnel, and it is a much less costly operation. Immense power may be applied on the principle of this machine, and a much greater rate of progress than the above may be obtained. It is well worth the inspection of all contractors and mining engineers.—*Engineer.*

LONDON-BRIDGE STATION OF THE BRIGHTON RAILWAY.—This company, in compliance with an order of the House of Lords, have reported that the number of houses inhabited by the labouring classes which they propose to take for the enlargement of their station, in the parish of St. Olave, Southwark, amounts altogether to 50; that the number of persons to be displaced thereby amounts to 398; that their bill does not propose to provide houses in substitution for them, and that there are plenty of houses and lodgings of the same character to be obtained in the neighbourhood.

FRENCH GALLERY, Pall-Mall.

THE ninth annual exhibition of pictures by French and Flemish artists is now open to the public at this Gallery. Without pretension to any subject of either high importance or startling originality, the present exhibition may bear favourable comparison, both as regards number and merit, with any of its predecessors. It has the indispensable feature—a picture by Madlle. Rosa Bonheur—which, although small, is as large as most of her recent works, and upon which this talented lady has bestowed more than ordinary care. It is entitled "Meadow Scene." There are still marks of haste in the thought and execution of the sky and mountains forming the background, but the animals are remarkably life-like, the character and expression of the heads especially so; and the herbage of the meadow, both in colour and detail, is an admirable example of natural truth, and an excellent lesson to English painters who are labouring under the pre-Raffaellite delusion.

Another talented lady, whose works the public have learned to admire at this Gallery—Henrietta Browne—has so changed both her style and subject, that, in all probability, "The Interior of a Harem" by her may pass unnoticed. But to any one who recollects her mode of executing some of her religious interiors, this is really the most extraordinary picture in the present exhibition; and although as a subject it is of little importance, still, as a proof of how much thought and character can be thrown into, in itself, so uninteresting a subject, this picture deserves great commendation. It might be called, were it not for the Turkish costume, "The state chamber in the Castle of Indolence." A female flute player is favouring three sultanas with a solo on the flute, who, seated on soft cushions, pay a kind of absorbed inattention to the music; one lays her hand on her heart, as if the air had awakened some faint remembrance of early happiness. A guitar girl lies on the floor amusing herself in tickling a sleepy tortoise into motion; another girl, standing over her, watches the process with a lazy and listless smile, and the only person apparently capable of lively and quick intelligence is a charmingly painted handmaid, leaning with her back against the wall, in attendance on the sultanas, and following with her eyes the fingers of the flute player. The whole is both elegantly drawn and charmingly painted, but, as we have said, to fully appreciate the varied powers of Madlle. Browne, it is necessary to retain a clear recollection of the excellent but varied pictures which she has previously exhibited.

A melancholy reminiscence occupies a prominent place in the Gallery. It is by the late Décamps, which death prevented him from finishing. It is entitled "Truffle Hunting." The subject is far from attractive, but it is treated in a broad and picturesque manner, which, combined with a rude and masterly grandeur, gives it a tone of elevation approaching the poetical. It is, in its unfinished state, also a valuable hint to young artists on the preparatory stage of such a picture, and would have been still more valuable had his widow, who exhibits this sketch, sent a finished work to hang by its side, and show how so imaginative a painter carried out his first conception of his subject.

Meissonier occupies his usual place over the mantelpiece. Of his three pictures, the "Corps de Garde," having several figures, is the most important. All the persons present are playing or watching a game at cards. The faces are admirably painted, the features having the easy play of nature, and the expression is so varied and true that it is quite easy to suppose what each soldier would say if he were to speak. The amusement to the spectator is still further increased by the contrast between the two gamblers, a young soldier against a veteran. The latter has evidently the best of the game, and scarcely cares to conceal his triumph, while the former looks at his cards with a bewildered air, and seems to anticipate defeat. The painter has placed his point of sight rather high, after the method of the Dutch school, which enables him to show more of his figures; but, small as the picture is, it is painted with a firmness of pencil entirely his own. "The Flute Player" is one of those quiet little subjects which he renders so naturally and so well, to which the theatrical attitude and bold laugh of a stroller, partly dressed for "Punch," forms a lively and spirited contrast. Louis Ruyter, the worthy pupil of the above celebrated painter, exhibits a very clever and highly finished picture, entitled "Soldiers at Leisure," a different name for a similar subject; but although the expression and attitudes of the figures by the pupil are nearly as excellent as those by the master, there is a coldness of tone, which, if somewhat refined as regards style, is scarcely suited to the subject.

Plassan is elegant in design and delicate in treatment, as usual, in his pictures of "The Bath" and "The Chocolate." They, however, do not display that careful finish which we have seen on former occasions, particularly about the neck and shoulders of his principal figures. The gracefully turned neck and throat of an elegant woman is a very beautiful object, and will defy the powers of a pencil unless wielded by the hand of an accomplished painter. Antoine Emile Plassan, with the opinions peculiar to French painters, may presume, and with some reason, that almost anything will satisfy English buyers; but French artists must be warned that when they paint down to the amateurs of this country, there are critics who know that there is anatomy in the female form as well as in that of the male, and that the due expression of it is much more delicate and difficult.

Lambinet sends six landscapes, of his usual size, but, from their general appearance, we much fear that hitherto chaste and delightful artist is also degenerating into what he has, perhaps, been told will suit the taste of the English collectors. Formerly the landscapes by Lambinet were not only admirable for their learning, but also for a charming sentiment of rural freshness and elegant repose; but we think his contributions this year, while probably possessing the same skilful arrangement, are comparatively

raw in colour, and do not tempt the attention further than to discover that parts are still admirably painted, but that they do not contribute to a pleasing whole. The shipping pieces by Jules Noel are, on the contrary, very carefully treated in every respect, and are, besides, very elegantly composed. The "View of Recamps" is especially quiet, and in the picture entitled "Low Tide" the group of ships in the distance is delicately coloured and gracefully arranged. Isabey is as dashing as ever; indeed, we think more so than usual, for in his "Ascending a Pass"—a carriage ascending a hill in a picturesque old French town—in the dash and daring of the moment the houses are represented tumbling about as if there was an earthquake; besides which, in that picture and the other, the "Port of St. Malo," the tone of colour is so heavy and cold, and the dark parts so sudden and black, that both pictures have the appearance of being unfinished. The pictures by Carl Joseph Kuwassag deserve to be ranked among the elegant and well-painted productions in the present exhibition. Two of them are entitled "Landscape," and the third is a "View of Ryde, Isle of Wight." "The Breakfast in the Fields," by Dillens, is an admirably finished picture, without losing the easy and free expression of the features. "Preparing for Breakfast," by Gustave Castan—a servant lost in thought, while the milk boils over—is equally well executed. In contrast to the soft and edgeless style of Plassan, the crisp and firmly touched very little picture by Chavet—a lady dressing, and reflected in a cheval glass—deserves notice. Darger exhibits six of his excellent domestic scenes in humble life. There is much pretty feeling displayed in "The Convalescent," where all the family are assisting in placing the arm-chair, and otherwise preparing for the sick boy. "The Naughty Boy" is receiving punishment from his mother, and, by his attitude shows that he is likely to deserve it, but also that it is just as likely that it will have no beneficial effect upon him.

"The Latest Arrival," by Langee, is another of the homely interiors which the French artists manage so cleverly, not only as regards treatment, but in the consistency with which they give unity to their subject, by concentrating the attention of their actors in the scene on the leading and most interesting object. The focussing of the point they with equal skill assist by the help of the strong colours and large mass of light. In this picture the woman nursing the newly-born baby, for that is the "latest arrival," with the children and young father looking at it, are all brought together in the foreground directly opposite the window, which gives the principal mass of light. The luminous effect of the light coming in at the window is contrasted by the half shadow into which the rest of the room is thrown, particularly that part of it occupied by the bed, where the mother is sitting up, who is also looking at the baby. This large space, being necessarily cool in tone, appears, perhaps, rather blank; it, however, gives a sense of repose and an impression of poverty suited to the scene; but the point of skill to which we wish to direct particular attention, is the manner in which the local colour—the real colour of a basin of milk she holds in her hand, uninfluenced by positive light or shade, compared with the white representing the light coming in at the window, renders it luminous, and in order that this small spot of local colour shall have full force, the kerchief round the head of the mother and her white night-dress are kept down considerably below the reality, and fall into the large mass of pure half shadow already mentioned.

With respect to the management of a large mass of white, two pictures may be compared with advantage to the young student—we allude to "The Morning," by Gustave de Jonghe, and "The Young Family," by Jean Baptiste Trayer. In each of these pictures the principal figures are dressed in white. In the latter the muslin dress is supported by a light and delicate blue, the whole mass being surrounded by furniture of a low-toned warm tint; and the white dress in the former picture is supported by the yellowish dress of a little girl, and a powerful contrast is found in a dark green cushion close by. In this picture we think there is too much white, but they are both very delicately painted by skilful artists, and afford, as we have said, a good opportunity of making a comparison with advantage. In the "Young Family" there are, besides, not only some heads beautifully painted, but infantine action most delightfully true to nature.

Returning for a moment to the point from whence we started the lovers of exact imitation, without "o'erstepping the modesty of nature," will have much pleasure in observing how Rosa Bonheur has, in her small picture of cattle in a meadow, rendered the effect of dew glittering on the grass, while the slight and varied character of the grass itself may be admired as a truly painter-like and legitimate method of executing detail of that kind; while the heads of the animals present, as we have said, a remarkable resemblance to life, will also deserve approbation.

It is not often that obedience to the rules of composition can be made to produce a comic effect, but we found an instance of it in a very clever picture by Frere; we allude to his "Mat Makers"—two old women sitting in the same position, or nearly so, and rather hump-backed in appearance. Now, two objects so remarkable require a third of a similar kind to prevent sameness, and the artist has ingeniously introduced a cat in the foreground—so what it loses in size it regains by position—setting up its back at something it is supposed to see on the floor, and thus three round-backed objects are obtained as, in this instance, required by the rules of composition.

BENSON'S WATCHES AND CLOCKS.—"Perfection of mechanism."—*Morning Post*. Gold watches, 5 to 100 guineas; silver watches, 2 to 50 guineas. Benson's new Illustrated Pamphlet, free for two stamps, descriptive of every construction of watch, enable persons in any part of the world to select with the greatest certainty the watch best adapted to their use. Watches sent free and safe by post on receipt of a remittance.

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ON SCULPTURE.*

OF all the fine arts which have form as their means of expression, sculpture is the most limited in its extent and material, its exhibition being confined to character and form. With these two specialties it must effect all we can desire—form, of course, being the vehicle for character. Difference of form gives difference of character. The human form is the highest, and, as such, the best medium for conveying the loftiest impressions of character, and is employed fitly to convey to our understanding the highest attributes of the Divine Being and of nature. The art of the ancients was as near perfection as it is possible to come, because it was conducted on principles now lost—principles which may be again restored and applied when the advanced state of society demands them. The art is at present, however, equal to our power to appreciate it; anything beyond this would simply be regarded as an object of curiosity; for the highest degree of intelligence manifested in a work of art interests but the few, and these are not necessarily the learned, scientific, or literary, but kindred spirits, with or without those adventitious accompaniments. The circumstances most favourable to the development of art of the highest order, concurrent with science and learning, and mingled with our literature, institutions, political and religious, are such as exhibit themselves in a desire on the part of the masses to be acquainted with the beauties of these refining agents of civilisation.

The fine arts exhibit the inventive power of man, and manifest themselves through three distinctive agents—form, colour, and sound. By these means certain fleeting graces of thought are rendered permanent and transmittable. A perfect imitation of a natural aspect is impossible, and if it were otherwise it would not be art. The fine arts deal with great abstract notions; things which have no sensible existence, but which belong to a higher and more exalted state of being, as equality, justice, goodness, wisdom, and beauty. Of these, beauty is entirely appropriated by the formative section of the fine arts; with this witching essence they captivate, whilst they inform us of all that the Creator has done for our enjoyment through the medium of form and colour. Beauty, then, is a principle in art. The artistic feeling is the power of creating agreeable emotions. The laws which govern or direct these are called aesthetic. Genius is the power to make new combinations out of existing materials, in imitation of nature, which is the operation of God's laws. The fine arts alone minister to the soul; they combine to give all the soul is capable of enjoying whilst connected with the body, and, to relieve it from the humiliating contemplation of its temporary associate. Fine art, as an abstract idea, can never be the subject of individual representation, and therefore perfection is an impossibility; and the extent of success in the pursuit is only the measure of individual capacity. But a soul was given to man; the fine arts alone minister to it; they are not appreciated by brutes or by brutal natures. Those who have no soul can live without them, but not so those whose souls are awakened to the consciousness of its high privileges; such beings demand, as with an appetite, the exercise of one or more of them; in the absence of this enjoyment life becomes a heavy, sorry business, indeed, but the fine arts give us a foretaste of a happy future whilst we sojourn in this world.

Necessity gives rise to style in kind and in degree; it is regulated by the conditions of the materials employed for its display; for instance, metal might exhibit parts and action which would be inappropriate in stone; in like manner, works in wood, plaster, clay, &c., present each special difficulties not to be met with in the others of the same kind and extent. To master any of those special modes will tax the ingenuity of the artist, and it is but fair to judge him by the degree of success attending his efforts. This is one clear reason why it is impossible to attain perfection in art. Moreover, any attempt to imitate one mode by the means proper to any of the others results in defeat, and it then becomes inferior to that of its own proper mode, which had invention exhibited in its production. Statues were at first sculptured in wood, then of baked clay, after this metal was employed, but statuary in marble was of the latest period. Landmarks or terminal pillars were first used at places of assembly, such as market-places, &c. A knob or head was put to the pillar, and the human countenance, with a leafed cap (now known as the "wide-awake"), was soon added. In this we find the origin of statuary sculpture. When the terminal pillar was placed in the market ground, a purse was carved on the front of the pillar, to indicate the nature of the commercial transactions to those interested. After this we find a hand introduced, holding the bag or purse, and in process of time the sculptor's art completed the idea, by making the pillar into the figure of a man, with the symbols of traffic and dispatch proper to those who make a journey to buy or to sell. The cap, feet, and staff have spread wings attached to them, to indicate speed in travelling, and sometimes a fleece or a ram is put at the feet of the statue. It is under these symbols, known as Manhood or Mercury. What were called household gods were once common, and were made of wood or of metal, and sometimes of baked clay; but when sculpture attained its highest development, the most lofty sentiments were embodied, with a degree of skill unapproached in modern times; but when religion was to be served on a magnificent scale, sculpture reached and surpassed the highest expectations, in its boldness, skill, taste, and profuse ornamentation. The Jupiter Olympus may be cited as an instance—the Minerva of the Parthenon as another—of the success attending their production. The art execution of the statues themselves being superior to the accompanying display of the gorgeous enrichments united, they were said to have no parallel in their magnificence. The sculptor's art was revealed in gold, ivory, silver, bronze, ebony, and precious stones.

The statue of Jupiter Olympus was sixty feet high, seated on a throne of ivory and ebony, inlaid with precious stones. This statue touched the roof of the temple with its head. The figure itself was of ivory and gold, with an enamelled crown of olive on the head, and an image of Victory on the right hand, with a burnished sceptre in the left. The drapery and the sandals on the feet were embroidered with flowers, particularly lilies, and the figures of various animals. The Minerva of the Parthenon was thirty-nine feet high; the naked parts of the figure were made of ivory, the drapery of gold, and the eyes of precious stones. There is a Victory, four cubits high, in her hand; at the bottom of the spear lies a dragon, and carved on the base is the nativity of Pandora.

There are two subjects in connection with sculpture which have afforded some interesting discussions amongst the *dilettanti*, both lovers of art and artists—namely, on painting statuary in life colours, and on the most proper mode of treating sculpture if in action or repose. But good taste rejects coloured statues, either in wax or any other material; the abstract qualities of form and character

are the only things sculpture as an art exists for. If sculpture were in natural colours we should then feel disappointed at its not moving also, for both belong to life. But a painting, though coloured, is not meant to deceive us, whilst statuary is fixed in position and gaze. The questionable taste which would have statues coloured, objects strangely enough, to the display of rapid muscular action in sculptural representation. This, indeed, would be absurd if the statues were coloured. But, says the critic, if the action exceed the tenth part of a second in duration, the action cannot be seen, and therefore it is impossible to represent it. So it would be if the art were limited to the specialty of limitation, but limitation is only a means of art. In action, however rapid, nature does not wait, but leaves it to the artist to reconcile us to the truthfulness of the representation of the action. This has been done with perfect success by the artists of antiquity, and the representation is as much of a real action as the material employed is living matter; and it is so far natural that the action has occurred as truly as that its representation lives; it is as much a real action as the form is real nature; both are alike suggestive—and art is nothing more. On the other hand, certain critics object to any kind of action, and assert that the only state which is satisfactory in sculptural representations is sleep or death. Now, these conceits would be tolerable if we were found, when asleep or in death, that we became marble, or metal, wood, &c.

Alto-relievo is high relief, or figures nearly detached from their ground, and is little different from statue sculpture. Basso-relievo is low relief, and quite different, being more allied to painting; it is outlined on a smooth surface, and sunk to a certain depth or ground, as in carved mouldings.

Rome produced few or no artists; they were too much engaged in war. The Roman general, Mummius, is said to have filled Italy with the sculpture he carried away from Greece; yet it is thought their absence would scarcely be felt. Though Nero plundered Delphi of 500 statues, it has been calculated that more than 2,000 were still left. 3,000 statues were brought to Rome from Rhodes, and Mutianus carried away as many from Athens, and even more from Delphi and Olympia. The Greeks alone were the people who gave to statuary its high character, as an art, capable of reaching the sublime and heroic without magnitude; they relieved it from the subordinate position as ornamentation or as symbols of state power; they alone cultivated and brought to perfection the high art of the sculptor. The career may be divided into five periods—namely, the primitive, ending with Phidias, 400 B.C.; the historic, ending with Alexander, 300 B.C.; the ideal, ending with Augustus; and the Greco-Roman, ending with Hadrian.

The education of the sculptor, after the manipulation of clay, the use of the chisel, and the capabilities of the several materials employed in the art, should, amongst other things, embrace the following:—Drawing, modelling, designing, plane and solid geometry, comparative anatomy, the laws of statics, equilibrium, balance and motion; the relative proportions of the human body, at all ages and of both sexes; the nature of drapery, and its use; light and shade; also the effect and the leading features of architecture, with its history, as well as that of sculpture and painting; ancient and modern universal history, and that part of its literature which relates to his art; national and local peculiarities in religion, policy, and the arts; and know pretty well what has been done before his own time; to distinguish between high and ornamental sculpture, with the artistic arrangement of proportional quantities in composition.

The fifteenth and sixteenth centuries produced some good sculptors, but none of the highest order; Donatello, Ghiberti, Cellini, Michel Angelo, and Bandinelli, alone make a respectable Italian school.

Gothic art in the main is simply ornamental, and takes its place as subordinate to architecture, which it enriches. Hindoo sculpture is pretty much the same, but has more of decided symbolism, with this difference, that the art seems stereotyped; it is no better nor worse to-day than at the earliest period. The forms, though conventional, are of a pleasing type. Of modern sculpture I must say that it is progressing, but its high price is a great hindrance to its success.

SALE OF FLAXMAN'S WORKS.—The *Critic* says, with reference to the sale by Messrs. Christie and Manson of the drawings and remaining works of Flaxman. Those who did not know Flaxman before would certainly not form any very exalted opinion of his genius from these remnants of his study. There was no work in marble of the least importance; we noticed one bas-relief of good style, called an assassination scene, in which a group of the four assassins was very finely designed in relief, and the action of all the figures was forcible, if not altogether natural. The designs for monuments were all very poor and common-place, and the same must be said of the greater part of the figures. The sketch books, and books of finished drawings of Æschylus, of the Iliad, of Hesiod, for Blake's engravings; of "Oberon," of Dante, of Milton's "Paradise Lost," and illustrations of the book of "Ezech," with the "Acts of Mercy," were the most interesting; but in these there was a very general want of the finish expected in these days of illustration. The sketch books contained very few original designs, being generally full of his studies in Italy from the antique and the renaissance sculpture to be found so abundantly there. None of these, however, could be pronounced a really careful and conscientious study of the original, although the character, especially in the antique studies, was extremely well seized as well as the action of the figures. One book contained some good and interesting drawings of a bas-relief in the Accoromboni Palace at Rome, the subject of which was Orestes and Pylades, or rather of Iphigenia. Throughout these drawings there is noticeable that great familiarity with the antique, up to a certain point, which was, in Flaxman's time, regarded as something wonderful. To us, now that we have had the greatest works of Phidias before us so long, with many other examples of antique art unknown in Flaxman's time, there seems to be too much adherence to the antique, and too little study of nature in all that our famous sculptor did. Even taking the larger view of Flaxman's works, which is to be got by a knowledge of his monumental sculptures, and those of his models which are in University College, we are disposed to think that modern English sculpture has not receded since his time. The catalogue stated there were 600 drawings, being first thoughts and finished studies. A considerable sum has been subscribed with the view of securing some of the best drawings to be added to the interesting collection at University College.

THE WIDOWS OF ROYAL ACADEMICIANS.—The Royal Academy has resolved to advance the allowance to the widows of academicians and associates from £75 per annum to £100 in the first class, and from £45 to £75 per annum in the second.

* Substance of a Lecture delivered at the Mechanics' Institute, Dublin, by Mr. HENRY McMANUS, R.I.A., reported in the *Dublin Builder*.

NEW COURTS OF JUSTICE.

OUR readers are aware that the question that this (Money) Bill be read a second time was lost by a majority of two, there being 81 for, and 83 against, the second reading. The decision, however, must be regarded as leading only to the postponement of a measure, which will in all probability be carried next session. Mr. Cowper gave an explanation of the provisions of the Bill, though he had already done so upon its introduction. In 1860 a royal commission sat upon it, which, after taking evidence, made a very able report, in which they recommended that measures should be taken for concentrating all the courts of law and equity—an object which, he would add, had met with general approbation. It was felt that the present state of the courts of law and equity was exceedingly unsatisfactory. Their arrangement had not been deliberately proposed, but was the result of accidental circumstances. The distance of the courts from the offices, and also from the chambers of barristers, was a source of the greatest inconvenience. It was also as a legal reform, tending to promote the much-desired fusion of law and equity, that this scheme was pressed upon the House. The reason for dividing the Bill into two was that they were obliged to take private property, which would involve inquiry up-stairs. The Money Bill was drawn to empower the expenditure of £1,500,000, which, realised, might be estimated at £1,400,000; and the Bill stated that whatever money was expended under the operation of its provisions was to be voted by this House. When the courts were erected, the premises now occupied in Chancery-lane and in Southampton-buildings, and also the probate registry, would no longer be required, whilst the site of the present courts would be disposable, and might be turned to profitable account. Considering the annual value of the charge for buildings at present used, he estimated that the proposed plan would result in a large saving. The operation of the Bill would not throw any charge upon the public to supply the dividends at present paid out of the funds of the Court of Chancery. What the public were called upon to do was to give a guarantee that in the event of these two funds being required the amount would be taken out of the Consolidated Fund; but he did not think that the guarantee was an alarming one as to its practical result. It was extremely unlikely that any charge would fall upon the national funds; but under any circumstances £45,000 was the maximum amount which could become chargeable upon the revenue. Then came the question whether it was a right course in itself to pursue, to take these funds from the object contemplated. He argued that it was. In the first place there were several precedents for the step. Buildings in Chancery-lane and the Masters'-offices in Southampton-buildings were purchased out of a similar fund. The Insolvent Court had also been enlarged at the expense of certain funds of a similar kind in the Insolvent Court. The Irish Four Courts had also been built out of the Suitors' Fund lying in the custody of that court. In the next place, the appropriation of these funds would occasion no injustice whatever to any one. No living person had any claim upon them. Moreover, Acts of Parliament had been passed at different times, authorising the Chancellor and the Accountant-General in Chancery to invest the sums accumulating from the fees, and it was therefore competent for the Legislature to decide what should be done both with the accumulated interest and principal. He did not conceive that any opposition could be raised to the measure on the ground of its interfering with existing interests. The only opposition which he anticipated was that which was announced in a petition from the Honourable Society of Lincoln's-inn. That society had put forward a proposal for erecting the courts in Lincoln's-inn at a cost of £100,000, on the condition that they were to receive interest out of the proceeds of the Suitors' Fee Fund, at the rate of £4,000 per annum. The difference between that proposal and the proposal of the Government was that the latter intended to take the principal of the fund instead of the interest, and to guarantee payment of the interest instead of receiving it. Under these circumstances, he did not see that the Society of Lincoln's-inn could raise any objection to the principle of the measure. There was another question with regard to a schedule, but that was a matter wholly for the consideration of the select committee to which he (Mr. Cowper) should propose to refer the Bill, if the House should agree to the second reading. There were reasons why the courts of justice should not be in the hands of a private body; but, on the other hand, he thought the House would be of opinion that there were several grounds on which it was desirable to erect a Palace of Justice, where the whole of the legal proceedings of the country should be carried on, in the very centre of the legal district. If the Bill passed into law, the right course to be pursued would be to appoint a commission to inquire into what courts and offices should be provided for, and to invite all the eminent architects in the country to furnish designs for the building. With respect to the cost, it was loosely estimated at £730,000 for the land, and £720,000 for the building—total, £1,500,000. This was £100,000 more than the funds disposed of by this Bill; but he thought it very possible that, when the matter came to be minutely considered, it would be found that £1,400,000 would be sufficient for the purpose. Even, however, if the additional £100,000 should be required, the saving effected in other ways would more than compensate for the outlay.

SUNDAY WORK IN PARIS.—The *Ami de la Religion* has received a communicated note from the Ministry of the Interior, in reply to an article which it had published on the subject of the desecration of the Sabbath in Paris, and expressing regret that the example of such violation should be set by the State, the department, or the city, which every Sunday, the article declared, occupy an army of workmen in labours the least urgent. The Ministerial note denies the correctness of the statement, and declares that, on the contrary, no labours are carried on but those which are absolutely necessary. The works at the Opera House were one of the cases mentioned in the article, and to that the note replies that the new buildings are on ground containing considerable springs of water, which require to be constantly drawn off. That operation and the earthworks which are the consequence of it are therefore necessarily carried on without interruption, night and day. No State works are continued on Sundays except when exceptional circumstances render that course absolutely indispensable. The contractors for the works of the city are under an obligation to discontinue their operations on Sundays and fête days, and all the contracts contain a clause to that effect. With regard to the contractors for demolitions, says the note, they make themselves liable to a fine of 300f. if they continue their operations on Sundays and fête days.

ADDITIONS TO THE LOUVRE COLLECTIONS.

IN the gallery of Apollo glass cases have been arranged on each side of the window looking on the quay. They contain very curious specimens of goldsmiths' work of the middle ages. In that on the right is the chalice of St. Potentian, Bishop of Sens, and in the one on the left are coffers, abbatial and episcopal crosses, enamels of the sixteenth and seventeenth centuries, &c.

The Egyptian Museum has just received a donation as remarkable for the beauty of the objects of which it is composed as for the rarity and scientific interest attached to them. This present is from a Polish traveller, Count Tyszkiewicz, who collected the objects during his researches in Egypt. The first class comprises 140 bronzes, among which seventy-six small figures are particularly remarkable. They represent the various gods of the Egyptian Pantheon, and their fine state of preservation allows the gold inlaying, which so much enhances the value of such works, to be properly appreciated. The small figures of the gods Anhour, Ptahub, and Cnouphis, and of different goddesses, are fine specimens of that kind of workmanship. Most of those objects bear inscriptions, which leave no doubt as to the name of the personage represented. Some of those divinities are very rare or even quite new to science, and several others, hitherto only known by paintings, are wanting in French collections. In that class may be mentioned a large snake in bronze, 28½ inches in length, a god with the head of a crocodile, and a personage whose head is surmounted by a star. The collection of Count Tyszkiewicz contains a great number of scarabæe, in hard stone enamelled. All these small objects supply fresh information for science by either furnishing variations of the names of kings and princesses, or a history of personages who had performed an important part under some of the Pharaohs, and thus deserve a place in history. There is also an ivory palette for a scribe, furnished with its reeds, and with two cakes of red and black ink, scarcely touched. The reeds are cut at each end, one for the red and the other for the black ink. A knife of yellow bronze is remarkable for its fine form and for its keen edge. Work in precious or hard stones is represented by three small objects of great beauty, and may serve as points in the history of the art, as each bears its date. The most recent is a square amulet in green sapphire, which bears the name of a functionary in the time of Osorchon I., who reigned in the ninth century before the Christian era; the head of the goddess Hathor is engraved in relief on this object. A pendant of a necklace, the material of which resembles chrysoprase, represents a Nile goose lying down; the lower surface bears the name of the Princess Neferou-ra, daughter of Toutmes III. This jewel was, therefore, cut at least 1,500 years before the Christian era. Engraving in relief on hard stone was, however, executed in Egypt at a much more distant period, as is proved by a small square amulet in sardonyx, bearing at the back the name of Auenemtré III., of the 12th dynasty. This king, who is well known as the founder of the famous labyrinth, belonged to the powerful family which covered Egypt with its monuments from Tanis to the bottom of Nubia, before the invasion of the Shepherds. At the back part of the amulet the king is represented as overthrowing an enemy. This scene and the Royal motto are incised. On the other side is engraved, in relief, an Egyptian named Harbes, seated before an altar. Notwithstanding the small size of this sardonyx (about half an inch), there can be clearly recognised the style peculiar to that fine period of Egyptian art. There is also among the collection a fine specimen of a coffin-lid, in yellow varnish; an earthen cup, enamelled in brilliant blue; and a wooden footstool, of a simple form, but valued for its preservation.

THE ACTION OF GALVANISED IRON ON WATER.

A. A. HAYES, M.D., in the *Mechanics' Magazine*, says:—Iron pipes covered with a firmly-adhering surface of zinc more or less pure, have been used as conduit pipes, under the received supposition that the zinc, by its polarising action from contact, will preserve the iron from corrosion, in the act of itself suffering oxidation. As the oxide of zinc, formed under some circumstances, adheres to the metal and encrusts it with a body not soluble in water, it has been assumed that water, passing through such pipes, would not become contaminated by either iron or zinc oxide.

Some months since, I analysed some well-water, which had produced a white deposit in the culinary vessels in which it had been boiled, and was itself turbid. The deposit proved to be oxides of zinc and iron with organic matter, and the water held suspended and dissolved organic salts of both these metals. On learning the fact that the pipes had not been long in use, a request was made that suitable precautions should be taken to avoid using the water in preparing food; and by insuring a large flow of water through the pipes continued for several weeks, the possible formation of a protecting surface was expected. But after long exposure in this way to much water drawn from the well, analyses of the water in the pipe and that in the well did not indicate any diminished action on both the metals. The zinc exposed to this water not only dissolved in it, but lost its usually observed power of protecting the less oxidisable metal in contact with it, and the quantity of salts formed from both metals was so large as to render it unfit for general domestic use.

Some weeks later I received a sample of water from a more distant town, the purity of which was suspected, and this was found to contain organic salts of zinc and iron also, although colourless and transparent. In this case the galvanised pipe had been longer exposed, and symptoms of anomalous disease in the family consuming the water, led to the chemical trials. The acid present in both salts appeared to be the cretic, and, in one case, traces of ammonia were found, constituting a compound salt. When the water was boiled, especially in metallic vessels, a white deposit of oxides of zinc and iron, with altered organic matter, appeared, but long-continued ebullition was required to insure complete decomposition of the salts.

The observed loss of protection in this exposure was deemed a point of much interest, for I had repeatedly examined iron boilers protected from corrosion by zinc surfaces, and have recommended this resort in numerous cases within the last thirty years, under varied circumstances, where the protection seemed to be nearly complete.

Mentioning these facts to my friend, Dr. Samuel L. Dana, of Lowell, he informed me that zinc surfaces failed to protect iron surfaces exposed to the flowing water of the Merrimac River, and showed me the result of such trials; the iron being much corroded both near by, and remote from, the protecting metal.

As the kinds of well-water which acted on the zinc and iron in these cases are quite common in every part of New England, it seems doubtful, in a sanitary

point of view, if such pipes are proper for conducting water generally; for, even when care is exercised, the metals dissolved in the water will surely be found in the food partaken of by families thus supplied.

I am aware that many persons consider both zinc and iron compounds when taken into the system as not actively poisonous, if even harmful, compounds of iron especially being found in the system. The chemical fact of the most importance in this connection is that the compounds of iron naturally found in the system are derived from compounds of iron existing in the food by the simplest transformation, and that other forms of combination will not supply these, and are active extraneous bodies which leave their marks on the stomach tissues.

In illustration of the activity of an iron salt when the dose is very minute, the effects of chalybeate waters may be instanced, and there are very medical men who have not witnessed the most surprising changes in the system induced by these, even when the ordinary preparations of iron have failed in their action. Now, in most of the ferruginous waters it is the crenate of the protoxide of iron which occurs—the same salt which the galvanised pipes produce—while the zinc is not found as the well-known oxide, but in the state of an active salt corresponding to the iron compound, and has no claim to consideration as a body forming healthy secretions.

TIMBER PROOF AGAINST THE WHITE ANT AND SEA-WORM.

THE *Australian Mail* gives some notes on a timber grown in Western Australia which is said to be proof against the white ant and sea-worm. It is commonly called "mahogany" in Western Australia, and it very much resembles that wood in appearance. The native name is "jarrah," and the botanical name of the tree "Eucalyptus." It has properties which make it peculiarly applicable for works in the Tropics, or on the sea-coast, viz., that neither the white ant nor the sea-worm will touch it, and that it suffers very little from exposure to the sun or atmosphere. It can be delivered in India or the Mauritius in picked logs, or in baulk (provided a quantity of not less than 200 loads is purchased at one time), for less than 4s. a cubic foot, and if arrangements were made for a larger quantity—say of not less than 400 loads—it might be delivered for 3s. 6d. a foot, or less.

The principal part of the timber trade of the colony of Western Australia is in the Vasse, from whence extensive shipments have been made to the eastern colonies of Australia, Ceylon, and some of the Indian railways. A quantity has also been supplied for Government works in the Mauritius.

The average consumption at Fremantle for Government purposes was about 500 loads per annum, and in 1856 a contract was entered into for the supply of a quantity of timber at Fremantle for 57s. 6d. per load. A small advance was afterwards made on this price, but since that time the trade has been extended sufficiently to allow of the employment of machinery, and the construction of trams for the conveyance of the timber to the port of shipment, so that the prices are much reduced. In cutting up the sand-grown timber, a waste of about 18 per cent. occurred. The loss in cutting up the logs from near the hills was not nearly so large as 18 per cent., as the cores of these logs were in general round.

The chief expense incurred in obtaining this timber is the cost of transport to the place where it is to be used. If the timber was brought in a quantity exceeding 400 loads, it would be worth while for the captains of the convict ships, about three of which per annum leave Western Australia for Ceylon or India, seeking cargo, to take it in as cargo for India, &c., and it is believed that in this case freight could be obtained for a little over £1 per ton. The charge for freight would probably not exceed 24s. a ton, or 30s. a load, which would be about 8½d. per foot—say 9d. The engineer of the Columbo and Kandy Railroad in Ceylon, said, in 1858, that he could afford to give £7 a load for timber fitted for piles, stringers, or sleepers; and since that time a considerable order has been given to parties in the colony, on account of this timber, so it is fair to presume that the price at Ceylon did not much exceed £7. The cost of these sleepers at Madras has been 10s. each, which is about the same as that of the Indian woods of the best class. It has been supplied to Adelaide, South Australia, and Melbourne, Victoria, in scantlings fit for railway purposes, for less than the price above estimated.

Captain Wray, Royal Engineers, says:—"As regards its properties, I have myself used upwards of 3,000 loads of it in buildings, jetties, and bridges, and I have examined timbers which have been exposed to the action of the white ant and sea-worm in situations where it could have been destroyed, if liable to destruction from either of these causes, and I never saw any penetration deeper than the sap wood, though deal, or other timber close by, was completely eaten away. This indemnity from destruction is generally attributed to its containing large quantities of gum resin. The strength and elasticity is about equal to Riga fir. This was ascertained by a series of experiments on beams, with a bearing of 12 feet, conducted by Mr. Manning, Clerk of Works at Fremantle. The weight of the timber makes it inapplicable to moveable joiners' work, such as doors or sashes; but the white ant, only working in the dark, will not attack these unless a building is left unoccupied for a lengthened period. I know of no objection to it, except that it is somewhat slow to season, and, if exposed before seasoned, will fly, and cast, perhaps, rather more than other timbers. The plan lately adopted in Western Australia to season it was to leave the logs in the sea for a few weeks and then draw them up on the beach, and cover them with a few inches of seaweed, taking care to prevent the sun getting at their ends. My experience led me to the conclusion that logs might lie in this way without injury for almost any length of time. Boards were cut 7 inches wide, and stacked so as to admit of a free circulation of air for five or six months before using."

The consulting engineer of the Madras Railway says "the wood is well spoken of by our engineers." The trial has not as yet been long enough to enable the qualities of the wood to be thoroughly tested on the Madras Railway, but the engineer says, in January, "that those placed on the road in July are in good condition at this date, and form an efficient substitute for teak in girder bridges." Some specimens now coming from Western Australia for the Great Exhibition will supplement this report in respect of proof of durability, both under sea water and in situations where it is liable to attack by the white ant, as there will be exhibited logs that have been in use as piles, &c., &c., for periods of from twenty to thirty years, without receiving the slightest injury.

ARCHITECTURAL INSTITUTE OF SCOTLAND.

THE Architectural Institute of Scotland have issued the twelfth report of the Council of Management, who say, that the Institute has been indebted during the past session for communications to the following gentlemen:—

I. Cosmo Innes, Esq., Professor of Universal History in the University of Edinburgh, Introductory Address, Subject, "Suggestions for the adaptation of Architectural Style to Place and Site."

II. David McGibbon, Esq., "Remarks on the Photographs of the Architectural Photographic Association."

III. John Lessels, Esq., architect, "An Inquiry as to the True Principles for our guidance in the Restoration of Old Buildings."

From the list of papers read, it might appear that there had been less than the usual amount of business transacted during the past session, this is not altogether the case, as there have been various subjects of public interest, or of interest to the profession, which have been before the Institute. In particular, for example, it may be mentioned that the operations at Roslin Chapel were the subject of discussion at repeated meetings of the Fellows; and the remonstrances of the Fellows against the pernicious consequences of these operations appeared in the newspapers at the time. The Council regret to think that Lord Rosslyn should not have yielded to the many representations which were made to him from various quarters on the subject.

Another subject which was brought before a General Meeting of the Institute, and was subsequently taken up by the Fellows, is one which has created much interest among architectural societies during the past year,—viz., the subject of establishing a course of study and examination for diplomas for architects. As this subject is still before the Fellows, and no definite conclusion has been come to by them, the Council cannot do more than say that it has met with a general approval—it being considered that at present the profession, for want of some test or another of qualification to join it, does not possess that status which it ought to enjoy.

The Council further state that, having been applied to on the subject of the Institute's joining the Architectural Alliance which was proposed of the various architectural bodies throughout the country, after several meetings, resolved that such alliance was desirable; and Messrs. John Lessels and John Dick Peddie, architects, Edinburgh, were appointed to represent this Institute at the meetings of the Alliance.

The International Exhibition of 1862 has likewise occupied a considerable share of the attention of the Council, who have been at some pains to endeavour to obtain such representation of the state of architecture in Scotland as might be worthy of the country. Whether it will be so remains to be seen; but the Council state that they understand that not more than about twenty architects in Scotland have applied for space. Messrs. David Rhind and Robert Matheson were appointed members, to represent the Institute in the General Architectural Committee in London, in connection with the Exhibition; and these gentlemen have taken considerable pains in order to obtain a representation of the works of deceased Scotch architects.

The honors offered by the Institute to apprentices were gained, last session, by the following young men:—

I. For the best geometrical drawing. Medals—John McGibbon, apprentice to Messrs. Baird and Thomson, architects, Glasgow; and Edward F. J. Clarke, apprentice to Mr. David McGibbon, architect, Edinburgh—equal. Second Prize—William Dothie Dobson, apprentice to Mr. Patrick Wilson, architect, Edinburgh.

II. For the best perspective drawing. Under this head was worthy of the distinguishing mark of a book—G. M. Moyes, apprentice to Mr. James Anderson Hamilton, architect, Edinburgh.

III. For a series of drawings from old buildings, measured and drawn from the originals. Medal—William Porteous, apprentice to Messrs. Bell and Menzies, architects, Edinburgh. Second Prize—John Thomson, apprentice to Messrs. Bell and Menzies. Third Prize—John Lawrie, apprentice to Mr. William Fairbairn, architect, Edinburgh.

IV. For the best original design—subject, a block of buildings for private dwellings. The Council have awarded the medal to James Souttar, draughtsman to Mr. James Matthews, architect, Aberdeen. The second prize of a book to William Young, apprentice to Mr. William Taft, architect, Glasgow.

In modelling, no prize was offered this session; but a book was awarded for the model of a cornice enrichment sent in by James Kennedy, 9, Sime's-court, Calton-hill, Edinburgh.

The Council have announced the following as the subjects of competition for the present year:—

I. For the best geometrical drawing, being an elevation of any existing example of Grecian or Palladian architecture—to be competed for by apprentices of not more than three years' standing of any Scotch architect.

II. For the best perspective line drawing of any existing example of architecture, projected and raised from the plan.

III. For the best drawings of a small portion of any ecclesiastical building—scale, 4 inches to 10 feet—with details one-fourth of full size; measured and drawn from the originals.

IV. For the best original design—subject, a church heltry in perspective—scale, 4 inches to 10 feet.

The 2nd, 3rd, and 4th to be competed for by apprentices or draughtsmen to any Scotch architect. Drawings under 3rd and 4th heads may be tinted.

The competition drawings to be lodged at the rooms of the Institute, Edinburgh, on or before the 1st day of March, 1862, accompanied by a sealed note containing the author's name, and bearing outside and inside a motto, and the head of competition under which it is to be placed. The motto on the letter to conform exactly to that on the drawing.

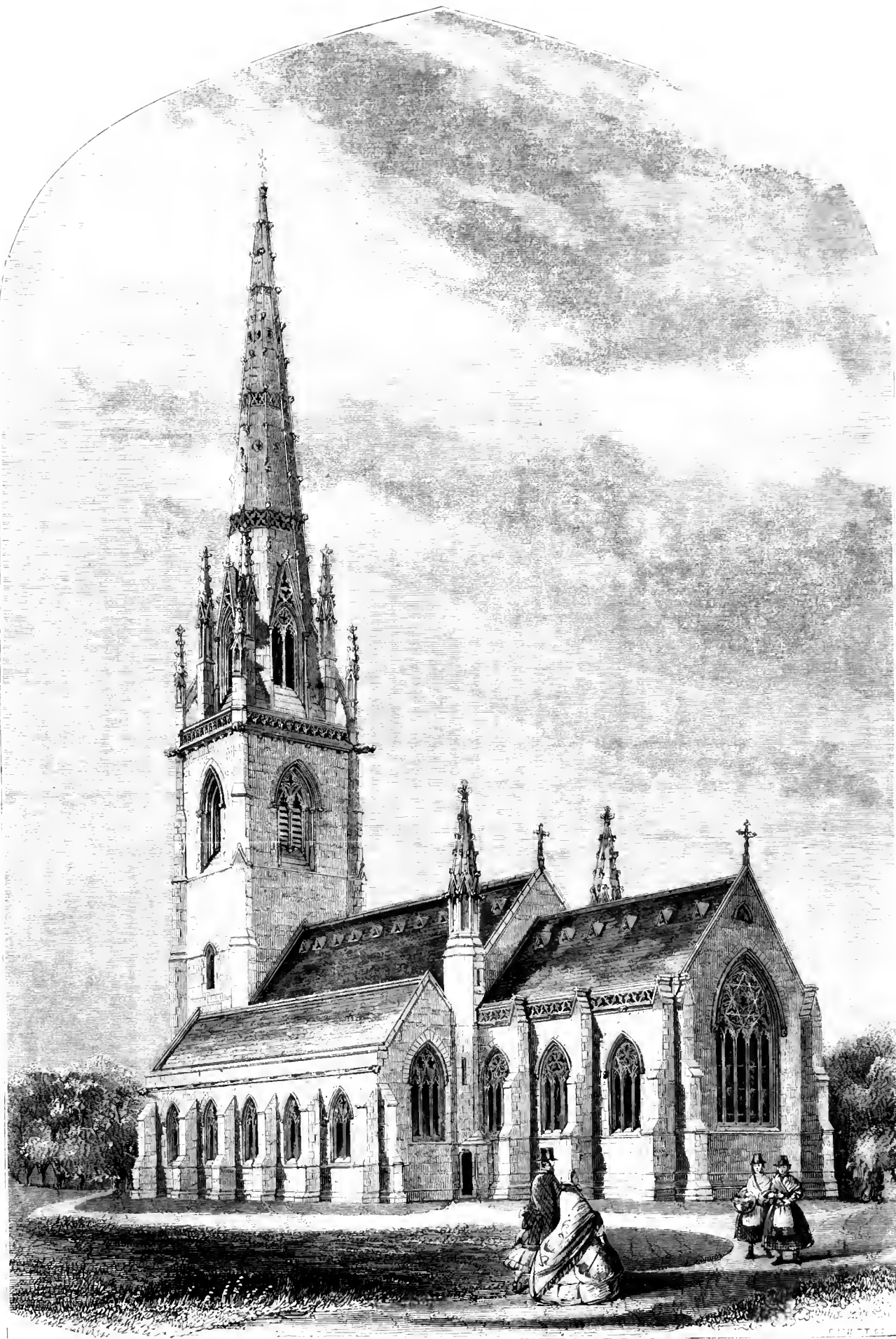
The prize drawings to be retained by the Institute.

In last year's report it was suggested to be desirable to adopt the suggestion of the professional members made some years before, that, in lieu of Transactions, the Institute should publish a series of lithographed engravings of select examples of buildings, ancient and modern. There have been some practical difficulties in the way of carrying out this suggestion, which was approved of at the meeting at which the report was read; and the Council have resolved that, for one year at least, the resolution to publish engravings shall be suspended, and they will forthwith issue another volume of Transactions.

From the abstract of the treasurer's accounts, it is gratifying to find that the finances of the Institute are in a good state, and, referring to previous years, are improving. This state of matters has principally arisen from a reduction of the expenditure in consequence of the change of premises.

The report is signed by Messrs. J. Dick Peddie, Chairman, and William Miller, Hon. Sec.

The Transactions of the Institute, tenth and eleventh sessions, are also published, forming the fourth part of the fifth volume. The part contains Introductory Addresses, by Professor Blackie and Mr. Cosmo Innes; a Notice of the Life and Works of W. H. Playfair, by Mr. J. M. Graham; and an Inquiry as to the True Principles for our Guidance in the Restoration of Old Buildings, by Mr. Lessels.



BODELWYDDAN CHURCH, NEAR ST. ASAPH.—MR. JOHN GIBSON, ARCHITECT



AN INQUIRY AS TO THE TRUE PRINCIPLES FOR OUR GUIDANCE IN THE RESTORATION OF OLD BUILDINGS.*

THE subject which I have the honour to bring before you is one of so much importance in itself, that I need not make any apology for its introduction. It will recommend itself to your notice by its own merits; and although what I have got to say regarding it is sufficiently well known to my professional brethren, yet, as our convictions may not prove alike, I hope that my remarks may lead to such discussion as will elicit your opinions individually, and prove the means of strengthening each other's hands when our aid is required in the execution of such work. Trusting, therefore, that you will find in these motives an excuse for my shortcomings otherwise, I will proceed without further preface.

It may appear, on the first glance at the question before us, that nothing could be more easily answered. It might be thought that if a building has fallen into decay from the wasting effects of time, or been overthrown by some of those eventful chances in our history which have laid so many of our finest edifices in ruins, it should be a simple matter to rebuild it as it formerly stood, the foundations, in most cases being extant; for although we might not be in possession of such facts as would furnish sufficient data to regulate the details of any single building requiring restoration, there may be other buildings of the same class still in existence which will afford a sufficient clue for our guidance. On closer examination, however, it will be found that the varied conditions under which every building has originally been constructed are so many and complex, that it is a very difficult matter to bring them again into action in its reconstruction; and, consequently, that any restoration must fail, in so far as it may not be in our power to comply with all the conditions originally brought to bear on it.

In an inquiry of this kind, it may therefore not be out of place to take a hasty glance at the past history of architecture, referring only, however, to those styles which have affected to greater or less degree the architecture of our own country.

In doing so, we shall find that men in early ages built merely to shelter themselves from the inclemency of the weather, and to find protection from those hostile to their interests—that as they congregated more and more together, and wealth increased, walls and towers were raised for the defence of the community, and temples for the worship of their gods—and that, from the smallest and rudest beginnings, architecture rose and progressed in its course, until it culminated among the Greeks, four hundred years before the Christian era, in such perfection of art as the Parthenon at Athens: a work which, for simple and majestic grandeur, has never been surpassed, and, even in its decay, has called forth the admiration of each succeeding age—an admiration well embodied in those expressive lines of the poet:—

'Alas! though perfect form of grace,
Once deem'd of gods meet dwelling-place!
Thou master-work of Phidias' hands,—
Thou boast and marvel of all lands!
Perish'd thou art; yet fairer so,
Than all that later art can show!'

Constructed of the finest marble of Pentellicus, with a precision that even yet defies the ravages of time, and adorned with sculpture so exquisite, that the very relics of it are now considered among the chiefest of England's art-treasures, it seemed as if Greek art had reached the climax in its production, and could go no further, for in the four succeeding centuries it gradually declined.

The Romans, with their conquest of Greece, appear to have imbibed so much of the spirit of their art, that, with the aid of Greek artists, they were able to form a style for themselves, which, although less refined in its nature, was even more gorgeous in its beauty than the Greek, lighter in its proportions, and more capable of being adapted to suit the wants of that luxurious people. This new style reached its greatest perfection, as exemplified in the Temple of Jupiter Stator, in the Forum, Rome, and in other buildings of that period, in the reign of the Emperor Augustus, about the commencement of the Christian era, and continued in use for about four centuries. At that time, as there had been previously in the Greek, so there was then a decline in Roman art; while the overthrow of the Roman empire by the Visigoths, and the spoliation of Rome, on two different occasions within half a century, must have seriously affected the further advancement of Roman Architecture; and, towards the end of the sixth century, we read of its total decline.

A new element had, however, been brought into action, for the Lombards, who were at that epoch in possession of the Roman States, working with their own ideas among the relics of the preceding ages, by degrees produced a new style, generally known as the Romanesque, totally different from either Greek or Roman, in which the columnar ordinance was not inharmoniously blended with Gothic forms. This style received considerable patronage from the Papal powers, whose influence at that time was great, and many beautiful examples of it yet remain.

But as everything in this world seems designed to be transitory, the semicircular arch, which had up to then formed one of the most distinctive marks of Roman Architecture, in its turn gave way to the Pointed; which, in the end of the eleventh and beginning of the twelfth centuries, we find mixed up with the semicircular, in the minor details, in France and some other portions of Europe, until, by some sudden impulse, which cannot now be easily accounted for, the Pointed finally superseded the former.

To turn now to our own country—we find little account of any buildings of note, except those raised by the Romans in the southern parts of the island; and of these we are merely informed of their decline in the end of the third century.

The middle of the fifth century was marked by the arrival of the Saxons; but very little of their architecture is believed to be in existence.

In 652, we have notice of the Bishop of Lindisfarne having built a timber church on Holy Island. At a later date, we learn that Alfred the Great did much to advance building and architecture. The greatest and most marked change, however, was that which followed the Conquest of England by William of Normandy, at the end of the eleventh century, at which time, or a little previous, the Romanesque, better known with us now as the Norman style, which, as we have already stated, had been in use a considerable time previously in Italy, was introduced into Britain; but with us, as there, it was only adopted to be superseded by the Early Pointed in the end of the twelfth century.

With the general introduction of the pointed arch, a great change took place in the principal features of our architecture. The horizontality of the leading lines in its composition which had prevailed from the Classical period downwards, had now to give way to the Perpendicular arrangement, which continued and formed one of the leading features of our Gothic architecture through its best periods, and was only departed from in its decline.

The Pointed Gothic, commencing with what we term Early English, in the end of the twelfth century, passed through all its phases, and became the architecture of this country for a period of somewhere above four centuries. It is gratifying to know that we possess excellent examples of all the different periods; and although they are of smaller size and less florid in their decorations, they will bear comparison, for beauty of proportion and elegance of design, with any of continental Europe.

Time will not permit, neither is it necessary here, to offer any definition of the varied changes that took place in the arrangement of the details and in the sculptural decorations, nor yet the time that elapsed from the end of one period to the commencement of the one following, which produced such beautiful variety in the transitional periods. These have been so clearly defined by Rickman, Sharpe, and other writers, that I may pass them without further remark. With the beauty of the details in moulding and sculpture, both in design and workmanship, however, we cannot be too much impressed, nor should we neglect any opportunity of studying them. Artists in those days worked without the cares and anxieties attendant on the prospect of an unperformed contract. The art-workmen, too, were also in many cases the designers; and thus a spirit of vigour and freedom pervaded their works which is entirely wanting in our modern productions. Each man's heart was in his work, and each, I have no doubt, vied with his neighbour whose labours should prove most excellent. Works were produced which have proved the admiration and instruction of ages past; and much of it seems, from the sound condition it is yet in, capable of enduring the ravages of time, and affording pleasure and enjoyment to future generations—a pleasure which seems now to be widely partaken of by the community, and not only so, but desired and understood. Those who have any doubt of this, I would ask to read those beautiful verses in the *Cornhill Magazine*, entitled the "Carver's Lesson."

I have now reached the end of the sixteenth century as regards our Ecclesiastical architecture. At that time it was subjected to another change by the introduction of the revived Classic or Renaissance, which the Quattro and Cinque Centists of Italy had carried to great perfection. The works of Sir Christopher Wren and Inigo Jones, with a host of others in this style, still remain to us; and although some of these are very excellent, yet it never reached the perfection here which it had attained in the Italian states, but, on the contrary, descended with rapid strides to that chaotic darkness which overtook architecture in the eighteenth century, when all purity of style and character seems to have been lost.

On the civil architecture of our own country (for we have a style of our own) much might be said, if time permitted; but I must limit my remarks to its general features.

It commenced with the lofty single square tower, which was increased in size according to the wants of its owner, ever keeping in view and providing for the best means of defence. It was solid and massive in appearance, with its solids enormously large in proportion to the voids. Altogether widely separated in its spirit from the Ecclesiastical Architecture of the same age, except in the later periods, it possesses a certain amount of grandeur and dignity of effect peculiarly its own; while, in the later examples, the variety of heights in the gables, its round corbelled turrets and high-pitched roofs, with their quaint dormer windows, give to it a rich and picturesque appearance.

Much of it was also good in execution, but the details and ornamental portions do not appear to have reached that perfection and delicacy attained in the religious structures, being in general overdrawn, rude, and quaint, and bearing much the look of having been executed by workmen copying from originals they did not quite understand or appreciate.

Such then, are the materials we have to deal with in the process of restoration—an Ecclesiastical architecture bearing in itself one connected chain of historical record from the end of the eleventh down to the end of the sixteenth century; and although few buildings bear evidence of being carried out to completion in the precise style in which they were commenced, yet there are some fine examples of such—Glasgow Cathedral, for instance—while many, from the changes they have undergone at different periods, contain in themselves examples of both the earliest and latest work—such as Melrose Abbey, where the whole are so agreeably blended, that it becomes a matter of research to know where one style ends and another begins.

Each building possesses, therefore, a value in itself, not only as a work of architecture, but an exponent of the wants and feelings of ages that are past, of which no other record may be in existence.

Many of them also, from the lapse of time and other accidental causes, present to the eye objects of such picturesque beauty, that poets and painters find in them a constant theme for the exercise of their talents, and they have now become so much enhanced in value by the associations that surround them, that one feels it to be desecration to interfere with a single stone, or even to remove one single stem of the ivy which threatens, in the luxuriance of its growth, to overthrow the very pinnacle to which it has clung in its aspirations.

If these Ecclesiastical remains have become so time-hallowed and precious, surely what we have of a civil and domestic character cannot be less so; but as restoration is the order of the day, we must now proceed to it with all alacrity.

Supposing, then, that we have now got well read up in our Archaeology as a due preparation, and made careful drawings of our subject—making ourselves familiar not only with its style, but also with the spirit that pervades the work—to carry on the operations will be our next step. But in this, the most important stage, I must now pause and ask your advice.

Let us, then, take up a case in point. The walls of the church that we have to restore had originally been well built in courses of squared stone; but have now in many places got dilapidated, and there are portions of them slightly displaced. The whole surface of the stone, more particularly on the south front, has become nhraded by the weather and discoloured by time; the joints have opened, and are now irregular, while the mass of the wall is sound; the under portions of the base mouldings are also wasted, and the under plinths of the basement have got displaced. Shall we recommend the base and wall courses to be

* A condensed report of this paper, read at a meeting of the Architectural Institute of Scotland by Mr. JOHN LESSELLS, F.A.S., appeared in our last volume; we now give the paper in *extenso*, from the Transactions of the Institute, mentioned in another page.

drawn out, the mouldings of the base to be re-worked, and the whole wall refaced with new stone, polished and close-jointed?

The jamb mouldings and tracery of the windows are in many places broken; the carved work wasted, as well as some of the mullions, while others are sound and good. Is it consistent that we should reduce the thickness of the mouldings, alter their profile to suit the reduced size, and have them re-worked, to correspond with our new ashlar?

I think I can anticipate a negative to both of my questions, and am afraid you think me very foolish to have asked them. Yet, is not this course followed every day? Have we not an instance of it in our own St. Giles' (Edinburgh). Do we not meet with it over the whole length and breadth of England? Are not some of the finest of the French cathedrals undergoing that process at present? Did I not see, only a few years ago, the beautiful Church of St. Ouen, at Rouen, scraped and cleaned, until the whole surface was spick and span new, from the pinnacle of the spire to the under plinth of the base?

With such authorities as these, can I not indulge my fancy also for scraping, whitewashing, and polishing up the front of my church equally with my neighbours? Don't you see how clean and nice the front of St. Giles' looks since it was cleaned? It is not a whit inferior to St. John's; it has none of the dirty, dusty, worn-out look about it now; and he would be a clever fellow, who, coming into our town, could discover the 'Auld Kirk,' where Jenny Geddes' stool played so conspicuous a part, if we did not aid him in his explorations for that pile.

These are the best arguments that can be brought forward in support of the case, but I fear you are still unsatisfied. I need not ask you, therefore, about the pierced parapet and pinnacles I intended to have introduced to your notice, for, I doubt not, these would be negative in like manner.

Perplexed, but not quite in despair, I think I hear a comforting voice whispering, "Each of those stones you would remove has an interest and beauty in itself. They are, in fact, the component parts of the building you would restore. You don't want a new building; you wish to hand down the present building in all its integrity to future generations, as the 'veritable building,' with its various associations, that has stood there for these six centuries past. You would not perpetrate a falsehood in stone and mortar, but if you adopt such measures, you may depend on it the verdict of every educated man would be, that you had been perpetrating falsehood with fraudulent intent, as it is to produce a fraudulent appearance that you wish to do it. Remember that the want of truth in any building, as in man or woman, ultimately and effectively destroys all the interest otherwise attached to it. No other quality, however brilliant, will compensate for the want of truth; and, as one of our greatest earthly enjoyments consists in the entire confidence we repose in those we love and trust, so our greatest disappointments arise from the want of it, and we turn in like disgust from sham and pretension in one thing as from all.

If you would be an honest restorer, you must be content to follow closely in the footsteps of the original designer, not only in the spirit but in the letter, assimilating both the drawing and the workmanship to the original as far as it is possible so to do, carefully preserving all that can be preserved, adding nothing, taking nothing away. Where walls are loose, and the cement has lost its hold, the best thing you can do will be to take them down in small portions, and have them rebuilt by careful workmen, laying every stone again in its own place, and making it imperative that they shall by no means destroy the original surface: rather leave jamb or arch moulding untouched, although these may be a little wasted, if their security is not otherwise affected, than insert new for the sake of a fine surface. It would be ill-spent time and labour wasted, to put in new work merely for the gratification of those who could not appreciate the original work. Their opinion is not worth valuing.

Window tracery is of so fragile a nature, that it may often require restoration when little more is needed; but if such has to be resorted to, it ought to be carefully worked to correspond in every way with the original. As much of the beauty of an old building often lies in the weather-staining and colours of the mosses and lichens on its surface, these should be preserved with care, except in such cases as they may be found to be injuring the building. Where the joints of the masonry require filling up, all unseemly patch-work should be avoided, as nothing is more offensive to the eye of taste than to see a picturesque old gable scarred over with patches of white mortar, or a black and oily cement, of which, as well as whitewashing, we have had too many examples.

Now, as the principle which guides us in the restoration of a part is equally applicable to the whole, I need not waste your time going further into details in this case. There are, however, cases in which we may be compelled to adopt another system in carrying out our restorations; but in Scotland these will prove the exception, not the rule, although in England it is painful to observe how very frequently they occur. I allude to those buildings where the stone is of such a friable nature as to crumble away rapidly under the influence of the weather, as you must all have seen, where carving, mouldings, and all trace of workmanship disappear, and a rude and shapeless mass of wall only is left.

When such does occur, the very safety of the building becomes endangered, and there is only a choice left between two evils; and however unwilling, you will be compelled to adopt the method first suggested, of cutting out every stone and replacing it with new. But the same principles that we held to be the rule for our guidance in the first case must also apply to this, let the new work be made a counterpart of the original in its whole style and detail.

I may mention, before proceeding further, that it is sometimes our lot to meet with some late and inferior work attached to, and destroying the character of, the early work to which it has been added. When this is the case, I think there need be no hesitation in at once removing it, and restoring the parts to their original condition; but such cases must inevitably be left to the judgment of the party employed in the restoration.

Again, we are called upon to examine a church of the fourteenth century, which is all sound and in good repair, and has long been used for the parish church, but which now, from an increase of the population, is insufficient for the accommodation of the worshippers. The hearers also complain of the pillars between the nave and aisles being in the way, the windows too small, and that the church is somewhat dark, and altogether not well suited for the present mode of worship.

How are we to deal with it? The answer to this would be very simple, if money were no consideration; for we then would recommend that a new church should be built, and the old allowed to stand as one of the landmarks of its generation. But in those days of utilitarianism, that answer would find little favour among the generality of heritors of parishes, who probably, before they came to

consult you, had made up their minds what sum they intended to expend, and only asked your assistance from some vague and undefined idea that you can help them to make a better bargain with their builder.

You may have heard, previous to these repairs being mooted, some individual heritor congratulating the parish on having such a fine specimen of that style of architecture, and telling how many, eminent as antiquaries and archaeologists, have visited and measured all its details; but now collectively you will soon find them ignoring all the charms of its architecture, in the desire to accomplish their ends with as little outlay as possible.

Your first thoughts, perhaps, are of pleasure in being the party selected to whom the work is to be entrusted, and you may be already considering with what a loving care you will go about it. You have not yet learned all the "secrets of the prison-house;" as yet they have only talked to you of architecture, and you are invited to go out and see the place, and meet the building committee; and then and there they put a damper on your enthusiasm, by acquainting you of the very liberal sum they have voted for the work, which you are also made to understand must cover the architect's charges. Possibly you now make up your mind to throw up all connection with the affair, and return to town as quickly as possible; but on second reflection you perceive that, if you won't, another will. You go to work with a heavy heart; for you know as assuredly as you have taken it in hand, that those very men who lay the onerous charge upon your shoulders without providing proper means for its fulfilment, will also take shelter under your name for all the shortcomings in carrying out the work; and you may, perhaps, have the pleasure of hearing them coolly telling their friends that architects don't understand these things now-a-days, and of the world of trouble they have had in getting their church put right. I have no doubt they had much trouble, but only in reconciling their principles to the state of the exchequer.

Well, as we find we have not the means to build a new church, we must make the money go as far as we can on the old one; and seeing it is a profitless and expensive process altering old walls, and contrary to the principles we have been inculcating, we shall allow these to stand, and make an addition, in the shape of transepts against the east gable. Possibly that gable may require to be taken down; we know that this was frequently done in the best days of Mediaeval work (which will be a sop to the sticklers for precedent). It is common sense that dictates it to us; for we believe in architecture being progressive, not, as some of its professors would have it now, stationary. We see also that, in those times, they did not hesitate to engraft the style of one period on that preceding it, when they could do so harmoniously; and as we have complaints of want of light in this building, were we to adopt a later style it may afford us more license and better meet the requirements of the day. This, however, you will observe, is not imperative—it is entirely optional. But we must take particular care not to injure or detract from the appearance of the old work; and while we preserve a true sense of the unity required in the composition, we must also endeavour to assimilate the new to the old, so that each may give value to the other, and that the character of the original work shall be enhanced and maintained so as to produce a satisfactory result. Of course we must take care that the additions, when completed, shall prove fit for their purpose, and as good as the circumstances of the case will permit.

Hitherto we have only alluded to restorations as connected with Ecclesiastical architecture, as it is, in fact, public property, in interfering with which some respect should be had to the feelings of the community. We can easily conceive what would be our annoyance and disappointment, after we had travelled some hundred miles to see and verify for ourselves the details of a church of some particular type, of which we had read, and found that our journey had been made in vain, the building having undergone the process of "restoration" by some heartless renovator, who had destroyed all trace of its identity.

It has been said that "every man's house is his kingdom," where he may reign supreme. (I suspect the author of that saying lived out of the reach of tax-gatherers.) If such, therefore, be the case, it will be evident that domestic architecture must be ruled by the taste of individual proprietors; but yet there are circumstances, which will readily enough suggest themselves to your minds, where the public may claim an interest in preserving a private dwelling, and that without lying under the imputation of claiming a right of roadway unrighteously. Where such is the case, public opinion, respectfully expressed, will seldom fail to command attention.

In carrying out extensive restorations or alterations on a dwelling-house, characteristic of any particular period of architecture, it will, in general, be desirable to adhere to that character in the new work as far as the requirements of the proprietor will admit. I repeat, as far as the requirements will admit; for as "fitness" ought to be the ground work of all good architecture, adherence to a particular style will not compensate nor prove an excuse for the want of it. The original designer, no doubt, contrived his plans to suit the wants of the proprietor, in the first place, and then built in the style of the age. It will not do, therefore, to neglect the major principle for the sake of carrying out the minor. You are making additions to suit the extended wants of the present proprietor; and the character of the new work ought, in like manner, to be an extension of the original style, to meet these demands. I cannot conceive a greater absurdity, than for a man, in the erection of a new mansion, to confine the size of its windows to the dimensions of pigeon-holes, to the exclusion of all the glorious benefits of sunlight, in the silly idea that he was carrying out the pure Scotch style, overlooking altogether its progressive character.

In carrying out buildings of this description, however, another question may arise, as to whether the details and decorations shall partake of the rude, quaint character of the original, or be made to harmonise with those of the present day. I think this question is very easily solved: for rude and quaint, nay, even puerile, as some of the decorations of our domestic architecture often are, you will generally find that they have the germ of something good in them; and I would consider the man unworthy the name of architect, who could not seize upon the spirit of the original, and carry it out, without descending to puerility, on the one hand, or destroying its character by over-refinement on the other.

I think it has been rather the fault than otherwise to copy literally those quaint old things, both good and bad. With this I have no sympathy, and would consider it no excuse—for the perpetration of something decidedly ugly, to be told that it was a facsimile of one three hundred years old. We have not yet advanced so far in art as to be able to retrograde with impunity. The painter and sculptor, when they condescend to copy, select the most excellent models they can procure; and they only copy that they may with more certainty arrive at a knowledge of

those principles by which those who preceded them attained perfection. I think it is equally important, that we, too, in our selection of examples, should choose those only that are valuable for their beauty of proportion and elegance of form.

There is another class of restoration which is now falling rapidly into disrepute, but which it would not be right to pass unnoticed. I allude to copying portions of old edifices wholesale, and adopting them into new work. I have no doubt that one and all of us, in the days of our "Paul Pryism" (a great fault, I fear, in the profession), have stumbled on some newly erected lofty pile, where you could, without the assistance of your cicerone, tell whence all the individual details had been brought and what positions they had previously occupied. In such a case, although the workmanship was excellent, the different parts in themselves good, and neither money nor labour had been spared in its execution, you felt that it was still tame and unsatisfactory in its general effect; and why? Simply, because it was a piece of unmeaning patchwork, put together without regard to the real expression of the proprietor's wants or feelings, merely because such things had been done formerly. Bannisters that, in the original building from which they had been taken, were synonymous with those that had heralded a Percy, or some such gallant name, to victory on many a hard-fought field, and formed part of the pageant and associations of the "house," calling to the retainers' remembrance deeds of daring done by their fathers, were here useless, because they had no significance or meaning. As a whole, soulless and lifeless, you found in it the spirit of every man's work but his who had put it together; and yet, with a most wonderful degree of vanity, thought himself the veritable architect of the building, and, more than likely, did not allow even a single drawing to leave his office—no, not even that for the nail-heads of the doors—without initialing it in four-inch letters with his renowned name. I do not know how you may have felt on such occasions, but I have always found my arm nerving, and the wish rising with me for the hammer of the iconoclast, that I might strip away some of its borrowed "properties," and show the utter contempt I felt for such heartless perpetrations.

I trust there are few now to whom this stigma will apply in the profession, as I believe that the members generally care more for the honour of their own name than the fee to be received from their client; for, although we can't get on in the world well without that, it will always prove the last consideration in the mind of the true artist.

There is only another class of buildings to which I shall ask your attention—that is, the remains of our ecclesiastical, castellated, and domestic architecture. I allude to those in ruins, some of which could be renewed if it were desirable to do so, and all possessing too much interest and value to be allowed to go further into decay.

If it is desirable to preserve those relics at all, their value will be the greater that we preserve them in as much of their original integrity as is left to us; and although it would be practicable in many cases to complete what is wanting, so that when completed they could again be brought to use, I, for my part, would be the last who would propose such a measure. In a church, for instance, it would not be agreeable to the feelings of a congregation to sit two hours within the grey and hoary walls of such a structure; and if we cover these with plaster, and destroy the unity previously existing between the exterior and interior, the associations connected with it are destroyed, and it will then have lost just so much of its value as a relic.

I have never been so fortunate as to meet with a restoration of that kind which did not raise a greater sensation of pain than of pleasure; and I therefore think it would be better to restrict our endeavours to make good the deficiencies of what is left, than restore what is gone. While speaking of this, I think it would be within the province of the Institute to inform our noble President that there is a great deal of Melrose Abbey in such a state that, if immediate measures are not taken to repair it, the consequences may be very serious; whereas, if taken in time, it will be a simple matter to put it right. Mr. Cousin, Mr. Brown, and I, made a careful examination of the Abbey last season, and were much struck with the condition in which it was. I may here give our Secretary a hint that Mr. Cousin might possibly be persuaded to make this a subject for a paper for our next meeting.

I will only touch upon one other subject connected with restoration, and I am done.

Much discussion has lately taken place in regard to the restoration of the old cross of this city, and placing it on the original site.

If we may form a correct idea of this structure from the description and engraving given by Arnott, I think we may be grateful that we are spared the trouble of its removal, for a greater piece of barbarism can hardly be conceived to have existed. Can any unprejudiced person look on this engraving and honestly say they would desire to see the original restored? If we are to have a cross, there can be no reasonable objection to taking the shaft and placing it on a few steps to raise it sufficiently above the street, as in so doing we would not be violating any principle; but to restore anything more would be a degradation.

It is evident that the civic authorities in 1756, when the substructure could not have been more than one hundred years old, put very little value upon it (although they ought to have made better provision for the shaft). With a greater knowledge of architecture, I think it would be a bold Town Council that would now venture to renew such an edifice.

If, however, the wants of the town really demand a covered cross, with gallery for proclamations, as has been contended, let it be done, and have it entirely new: but don't trammel the architect working up old materials that are unfit for the purpose. At the same time, the shaft of the old might be erected in some convenient place, as has been done with that of Peebles, in the court of the Chambers Institution.

It would be well if we had some court connected with our proposed Industrial Museum, in which, as in that of L'Ecole des Beaux Arts, Paris, such relics could be fitted up and preserved.

I have now, in a hurried and cursory manner, gone over the nature of the buildings requiring restoration, and the manner in which they ought to be dealt with; but in order to have done justice to the subject, it would have required two or three papers and a series of drawings to have illustrated them. The shortness of the time that has elapsed since I was asked to bring it forward has totally prevented me preparing these. If, however, it leads to the matter being properly discussed, I shall be satisfied. I am afraid I may have left much untouched that I should have gone into, and gone into a great deal that I ought to have avoided; but I have not had time to condense and systematise those desultory observations, and trust, as I before mentioned, that my desire and intention will excuse this.

ARCHITECTURAL MUSEUM.

THE lecture for Tuesday last, when Mr. HERSFORD-HOPE, the President of the Institution, occupied the chair, was entitled "On the History of the Temple Area at Jerusalem, with its buildings and sub-structures," by Dr. FERMETZ PIEROTTI, architect to the Pasha of Jerusalem. The lecture, which was numerously attended, was illustrated by a great number of drawings and plans. The CHAIRMAN, in introducing the lecturer, said they would have that night a lecture of very peculiar interest; at the same time he must explain to the meeting why the council had a little deviated from the ordinary routine. The gentleman to whom they would be indebted for the information they should receive that night was Seigneur Pierotti, who had lived in an official situation at Jerusalem for several years, and had collected much topographical and other information in that city. But he could not address a public assembly in the English language, the present being his first visit to England; however, in the French language Seigneur Pierotti would explain very briefly what was the purport of his information, and then after that their friend the Rev. George Williams, who had made the topography of Jerusalem a subject of study, would give more details respecting the discoveries of the lecturer in English. Seigneur PIEROTTI having briefly addressed the meeting in French in introducing the subject of his lecture, the Rev. Mr. WILLIAMS interpreted, and illustrated with much minuteness by referring to maps, drawings, and plans, a document in French containing an account of Seigneur Pierotti's discoveries and inferences concerning the site of the temple of Jerusalem. He premised that there were some points in which he did not agree with Seigneur Pierotti, but that gentleman's discoveries were very interesting. The lecturer then briefly referred to the selection of the site of the temple by David, to give some account from the Scripture narrative of the temple itself, and to state that in the year 70 after Christ the temple was taken and destroyed by the Romans under Titus. He next drew attention to the mosque of Omar and other structures which had been erected on the site of the temple, stated that Seigneur Pierotti had made many discoveries as to the history of the temple area, and gave a description with the aid of the drawings on the wall, first of the exterior of the temple area, and then of the interior. He explained, with minuteness, several drawings relating to Jerusalem, as also a general plan of the city of Jerusalem by Seigneur Pierotti; but what they had more particularly to consider that night was the condition of the area of the temple. In some portions of the area Pierotti found specimens of masonry which he believed to be of the time of Solomon, as they corresponded to the description of the stone given by Josephus. And because he found those stones in the position they were in, he found they were much deeper than the stones used in the other walls in Jerusalem. The stones were of enormous proportions, and clumped together with iron; and Josephus told us that such was the ease with the stones of the temple. Above the Solomonian work Pierotti found that of Herod, then Roman work, and then dabwork, great experience in which he had gained during a residence of eight years in Jerusalem. Seigneur Pierotti found the existence of a conduit, or sewer, which might have conveyed the blood of the sacrifice in the temple down to the valley of the Kedron; he also traced several other conduits, and had found hundreds and thousands of medals and coins in the valley of the Kedron; the coins were very few of them in silver, being mostly brass, but some of them were exceedingly interesting. After describing some other works which Seigneur Pierotti met with in the prosecution of his researches in the area of the temple, Mr. Williams said, in the exterior of the mosque one of the most interesting discoveries was made at the arch of the Ecce Homo, when Pierotti was engaged in the establishment of a house of the Sisters of Zion, a religious body; in making the requisite excavations he came upon a small Roman arch. But that was not the most important discovery he made at that particular part. When making further excavations he found himself in a very extraordinary subterranean building—that was in June, 1860, when he fell into a hole in an enormous underground building. The roof of this extraordinary building was 18 feet below the level of the Via Dolorosa, all filled up with debris. It commenced at the north-west angle of the temple; its length was 230 feet, its width 21 feet, height 26½ feet on the north, and 28 feet on the south part. There was a descent into it by eighteen steps in masonry. What this great subterranean passage was, it was exceedingly difficult to conjecture. Seigneur Pierotti believed it was connected with the fortress Antonia, so minutely described by Josephus, and where Antigonus was murdered. The architecture of this passage was exceedingly curious, and was covered over with enormous flags. Another curious thing in connection with this subterranean passage was, that for a considerable length along the wall there runs a conduit or aqueduct, which formerly delivered itself into the pool of Bethesda. He now came to the most curious discovery Seigneur Pierotti had made; in the course of his excavations he made a discovery which caused great excitement amongst the Jews, Mohammedans and Christians of Jerusalem. He tapped a fountain, and nobody knew whence it came or whither it went. When first tapped the water was very bad, but after giving out thousands of gallons a day, it became more palatable, but still it was water of a very peculiar taste. The water was of so peculiar a character that no two persons agreed as to its qualities: some saying it was sweet, some bitter, some saying it was salt, some insipid, and so on. One traveller described the drinking of the water as like drinking cold milk and water. That water came from the north-east of the city. Seigneur Pierotti thought that here was the aqueduct of Hezekiah, who brought water into the city of Jerusalem. When the Jews heard of the finding of this running water they came flocking down every day to see it, old men, women and children with babes in their arms, to bathe themselves with this water, believing that it indicated the time for the Messiah to come, and for Jerusalem to put on her glory again. The excitement was scarcely abated now, though the source had been running for nearly two years. Mr. Williams next proceeded to refer to Seigneur Pierotti's investigations of the interior of the *Haram es Sherif*. Amongst his discoveries in connection with the fortress Antonia was a subterranean passage between the fortress and the eastern gate of the temple, which corresponded with a passage prepared by Herod for his protection in case of a rising in the city against his authority, of which he was always afraid. That passage Seigneur Pierotti had actually traced. Mr. Williams then referred to Pierotti's excavations at the south-east of the temple, where he found works which he believed to be of the period of Solomon and Herod, and some of which had been rebuilt by Justinian. The vaulting of portions of the work was of Roman times. After referring to other discoveries, including the church of Justinian, and the Dome of the Rock, the columns of which were not *in situ*—not in the place where they were originally set up, Mr. Williams came to the water communication, the conduits and aqueducts within the Temple enclosure.

An enormous quantity of water was introduced into the Temple, to carry off all the blood and offal of the sacrifice, which would have been an injurious nuisance if not taken away. He then pointed out a number of conduits which had been discovered by Seigneur Pierotti, and which evidently had connection with the removal of blood and offal from the Temple. Mr. Williams resumed his seat amidst applause.

Mr. WIGLEY (who is well acquainted with Jerusalem) made some remarks in French, in the course of which he bore testimony to the value of the discoveries made by Pierotti.

Seigneur PIEROTTI made a few observations in reply, also in the French language.

The CHAIRMAN, on behalf of the meeting, thanked most heartily Seigneur Pierotti and Mr. Williams.

Shortly afterwards the meeting broke up.

SOCIETY OF ARTS.

AT the meeting of this society on Wednesday last, Mr. HENRY COLE in the chair, a paper was read "On the Effect of Prizes in Improving Manufactures," by Mr. SAMUEL SYDNEY. The author said that the question to be examined was, whether under any circumstances the improvement of manufactures can be promoted, or manufacturing inventions stimulated, by invitations to compete for substantial or honorary rewards. It was one that ought not to, and need not, be discussed on theoretical grounds, as there was the experience of centuries of trade to refer to, and the records of more than one society. He had no doubt that the general impression amongst the wealthy and educated classes was in favour of the prize system; but his own opinion was the contrary. He thought that the conclusions formed on this subject were founded on the *post hoc, propter hoc* fallacy, and that the real cause of the advance in various manufactures was the daily increasing demand, and competition among manufacturers, and not the prizes given at exhibitions or elsewhere. The most important manufactures of this country had been carried to their present perfection by the ordinary demands of trade competition. No prizes or honorary rewards of an official or unofficial character had ever been bestowed on, or offered to, the authors of the steps by which the iron manufacture, the manifold hardware trades of Birmingham and Sheffield, the woollen, cotton, or linen manufactures, had become famous throughout the world. The manufacture of marine steam-engines, in which such wonders had been effected during the last ten years, and the locomotive engine, had all found sufficient stimulus for daily improvement in commercial enterprise and commercial demand. It might, however, be asserted, that prizes tended to promote solid improvements if they failed in producing great inventions. This view, however, the author combated. He argued that it was extremely difficult to find really competent judges, and that, even if these could be found, how few were the instances in which it was possible to test, in a satisfactory and practical manner, the comparative merits of manufactured articles. A judgment should be founded on evidence. There was very rarely available reliable evidence to guide judges in deciding on the relative merits of manufactures and machinery; therefore such trials and such verdicts had better be avoided. Their tendency was often to unfairly raise, and unfairly to depress, manufactures, while they only mystified the public. The author thought that the admirers of the prize system were in the habit of confounding the advantages of public exhibitions and the public competition of trade with prize competition. He brought forward evidence in support of his views from the awards made at the Great Exhibition of 1851, as well as those of the Royal Agricultural Society for many years past.

Mr. WILSON said he did not think it was a question of prizes in the abstract, but of collecting together the best kinds of productions.

Mr. HAWES then said that Mr. Sydney had taken a very narrow view of the question. The principle of giving prizes in an International Exhibition was quite different to the matter contained in the paper. The Exhibition was for the purpose of making known inventions which could not be obtained by any other means, as the public would be the best judges of inventions.

Mr. PALMER said that the prizes awarded by the society had a very beneficial result. If they gave prizes for merit, why should they not give prizes for manufactures? He thought a certain system of prizes should be continued, but that more judgment should be exercised in their distribution.

Mr. NEWTON WILSON differed from the view of Mr. Sydney. He did not see why manufactures should be excluded from prizes, as the future fame and position of an inventor depended in some cases upon the award of a prize. The effect of prizes in America had been a stimulus in the increased production of manufactures thus noticed. He most strongly advocated the reward of merit, where practical. The Commissioners of the International Exhibition were, perhaps, right when they decided not to fix the position of merit, but to leave the public to judge for themselves.

Mr. SOLOMONS said it was quite clear that if they had not decided upon giving prizes at the approaching Exhibition, they would not have had 4,000 French exhibitors. He was decidedly adverse to the system of prizes being abolished.

Mr. EDMONSON said, with respect to the order of merit, it should be so arranged that prizes should be given to inventors who produced the greatest amount of usefulness at the lowest possible cost.

Mr. BIGLOW (an American gentleman) said he had seen the working of the prize system in New England, and the result was a great improvement in the mechanical arts. He was an exhibitor, and if there had been no prospect of a prize for his invention he certainly should not have gone to the expense of coming over here.

After some further discussion,

Mr. SYDNEY said prizes could do no harm for things which were wanted; but it was a snare and a delusion to give prizes for inventions for novelty alone, and which were hardly of any practical use.

The CHAIRMAN mentioned that Prince Napoleon had lately entered his most emphatic protest against prizes.

SOCIETY OF ARTS.—The Society of Arts, with the view of showing hospitality to the Commissioners, guarantors, jurors, principal exhibitors and others connected with the approaching Exhibition, and especially to our foreign visitors, will hold three evening receptions at the South Kensington Museum, on the 7th of May, 9th of July, and 8th of October.

LIVERPOOL ARCHITECTURAL SOCIETY.

THE fourteenth meeting of the present session of this society was held at the Royal Institution. Mr. Goodall occupied the chair. Mr. Seoufield was elected an associate member. Mr. Heffer called the attention of the meeting to the death of Mr. John Thomas, sculptor, whose death he had seen mentioned in the papers. He was sure that all who were acquainted with the deceased gentleman's work would agree that they were of an admirable character. Mr. Thomas had executed many important and admirable works, both in sculpture and architecture. He (Mr. Heffer) had been a pupil under Mr. Thomas, and felt his loss very deeply; for he was not only a great man as a designer, but he was also a good man, and was highly respected wherever he went. He was also a charitable man, but never acted with ostentation. For the last four or five years he had been largely engaged in works for the late Prince Consort, at Windsor Castle, the Chapel Royal, and at Balmoral, and the skill and taste exhibited in his works were greatly admired. Mr. H. P. Horner said he believed Mr. Thomas was a man who had raised himself by his own talents, and he was sure that anything communicated in reference to his career would be found interesting. The Chairman said he would suggest that Mr. Heffer read a memoir of Mr. Thomas at their next meeting. Mr. Heffer said he would do so.

Mr. FRANK HORNER then read a paper on "Some of the Relations existing between Modern Literature and Art." The paper, described at some length the progress of art and literature in this country, and the influence which they exercised on each other. The Chairman, at the conclusion of Mr. Horner's paper, said that he thought they ought to be on their guard against receiving all the shallow criticism that emanated from the press in regard to architecture, for some of it was not of much value. A conversation took place, in which the Chairman, Mr. Councillor Pieton, Mr. H. P. Horner, and other gentlemen joined, in regard to literature and art.

BODELWYDDAN CHURCH.

IN our present Number we give a view of the exterior of Bodelwyddan Church, near St. Asaph. Views of the interior, and some details, will be found in our last volume, together with a description of the work. As there mentioned, Mr. John Gibson was the architect.

ROAD FROM BAYSWATER TO BROMPTON.

THE new approach to the International Exhibition from the north-west districts is now nearly completed. The entrance to the park is through the Victoria-gate, Bayswater, and the old road is followed, without any material alteration, to the foot of the bridge. The width of the carriage-way over the bridge is increased by about 6 feet, taken from the side path for pedestrians. The carriage-road south of the bridge is followed until it joins Rotten-row, nearly opposite the eastern dome of the Exhibition building. From the point of junction Rotten-row is divided by posts running along its centre to the Queen's Gate. The half next to Kensington-gardens forms the continuation of the road to the Exhibition, and the other half is left for the use of equestrians. Along the whole line there is a side pathway for pedestrians, and the exit is through the Queen's Gate, within a short distance of the western entrance to the Exhibition building.

CHIMNEY-PIECE AT THE INTERNATIONAL EXHIBITION.

AMIDST the, one would think, hopeless confusion, in the shape of empty packing-cases and unpacked articles which in a week are to astonish the world at Brompton, we occasionally catch a glimpse of some work which tells of the energy and spirit with which the collateral branches of the building trade have entered into the contest. Not only is the Medieval Court to show a marked advance upon the collection which Pugin was, eleven years ago, enabled to make, but Hart, Skidmore, and other metal workers, Minton, and numerous tile makers, sculptors of every style, seem determined to win high honour in this international encounter.

We have been asked to direct attention to a chimney-piece, by Mr. G. Mitchell, of Walton-street, Brompton, which appears on another page. It is beautifully carved in every part, and the pure statuary marble in which it is executed admirably displays the carver's skill. It is now standing on the south side of the eastern dome, and its production has, we believe, entailed a sacrifice in time equal to some £200 upon its spirited exhibitor. It is 8 feet 2 inches in width and 4 feet 1 inch high. The shelf is nearly 2 feet in width, and thus allows the sides to be carved in a similar manner to the front.

LONDON AND MIDDLESEX ARCHÆOLOGICAL SOCIETY.

A GENERAL meeting of the members of this Society and their friends will be held on Monday, April 28th, at 12 o'clock precisely, Mr. Alderman T. Q. FINNIS in the chair. The members will, by the kind permission of the masters and wardens, meet at Bakers' Hall, 16, Harp-lane, Tower-street, E.C., and from thence proceed to visit the churches of All Hallows, Barking; St. Olave's, Hart-street, and St. Dunstan's-in-the-East. The meeting will, it is expected, be addressed by the following gentlemen:—the Rev. John Maskell, the Rev. A. Povah, Mr. Deputy Lott, Mr. J. G. Waller, and Mr. George Corner. At the conclusion of the meeting dinner will be provided at the Mark-lane Coffee House. The annual general meeting of the Society will be held at No. 7, Mildred's-court, on Thursday, May 8th.

THE DUKE OF NORTHUMBERLAND AND THE THAMES EMBANKMENT.—The Duke of Northumberland, who holds property along the river side, has petitioned the House against the bill for the Thames Embankment, and prays that he may be heard by himself, counsel, agents, and witnesses, before the committee appointed to consider the subject, in respect of any provisions contained in it prejudicial to his rights and interests.

CHURCH, CHAPEL, AND SCHOOL BUILDING.

Cheshire.—A new church has just been begun at Cheadle Hulme. The design (which provides for extension) consists of nave, chancel, and south transept, with vestry and organ chamber on the north side of the chancel. There is a timber belfry at the north-west of the nave. The font stands at the extreme west end; the pulpit on the south side of the chancel arch. There is a credence table on the north side of the sanctuary, and sedilia on the south. The contract has been taken by Messrs. Thackrah and Peirce, of Stockport. The architect, whose design was chosen in competition, is Mr. J. Medland Taylor, of Manchester.

Manchester.—*St. Nicholas Church.*—On Thursday se'nnight this church was re-opened, after having been closed for about twelve months for restorations. There are now three stained windows. That over the altar is a memorial window of the Rev. John Fuller, who died in 1844. The window directly opposite to this has been presented by J. Foord, Esq., and that to the north by P. W. Martin, Esq., M.P., and bears the Wyckham and Martin arms, and also those of the city. The most important of the improvements that have been effected has been the increased accommodation afforded by the old pews being replaced by open benches, and a gallery erected around the whole body of the church, there being formerly only an organ gallery at the west end. Mr. Gough is the architect. The works have been executed by Mr. Stump, at a cost of £1,700.

Yorkshire.—*New Church at Carlton.*—On Wednesday se'nnight, the foundation-stone of a new church was laid at Carlton. The old fabric had fallen to decay, and the new structure will be built upon its site, at the sole cost of Lady Beaumont. Messrs. J. B. and W. Atkinson, of York, are the architects. The edifice is to be of the geometric decorated style. The nave will be 73 feet in length by 25 feet 8 inches in breadth, the chancel 24 feet by 18 feet, and there will be a north transept 16 feet by 15 feet. At the south-west angle of the nave will be a tower 55 feet in height, surmounted by a spire 49 feet high. The porch will be on the south side of the church, and the vestry on the opposite side near to the transept. The east window will be of four lights, and the west window will contain five lights. The roof will be open timbered, stained, and varnished, and covered with blue and green slates. The walls of the church will be faced with Bradford sets. Ancaster stone will be employed for the dressings. The lower part of the tower will be used as a baptistry, which will be entered under arches opening into the church and porch. The entire cost of the building will be about £3,000.

Ireland.—*Carmelite Church, Moate.*—This building is now being "re-modelled." The sanctuary has been rebuilt and furnished with a mediæval altar, tabernacle, and altar furniture. The altar, supplied by Messrs. Barff, of Dublin, is composed of Caen stone, with illuminated glass work in front. A small Lady chapel has been erected at the gospel side of the sanctuary, with a stained glass window. The aisle at the southern end of the church is finished externally in chiselled limestone, and lighted by five double lancet windows. The tower has now reached the height of forty feet. A stone spiral staircase runs up the tower. The nave will be divided from the aisles by five arches springing from polished pillars, above which will be five two-light lancet windows at each side. The first of these arches have been already erected, and the required space has been obtained by removing a portion of the old external wall of the southern side. The same course will be pursued in the construction of the other arches. The foundation of the northern aisles is being built, and the work is progressing rapidly. The old convent has been removed, and the site of the church cleared. When the works are sufficiently advanced the old roof will be taken down, and the walls of the nave carried to their required elevation. The sanctuary will be lighted by three two-light windows, and the ceiling is to be groined in plaster. The style adopted is Early English. The tower will be surmounted by a spire 126 feet from the ground. All the stone required for the erection of the new church had to be brought from Tullamore, a distance of thirteen miles, as even rubble stone is not to be found in the neighbourhood of Moate.

Bradford and Beswick.—*Christ Church.*—This church was consecrated on Saturday. The building is the first of a series that has been undertaken under the auspices of the Diocesan Church Building Society. The building is of brick, in the Gothic style, and is free from ornament, within and without. It consists of a nave 45 ft. wide, transepts 79 ft. from north to south, a chancel terminated by an elliptical apse, and a tower, which is intended at some future day to support a spire. The extreme length is 114 ft. The building cost £4,500, and will accommodate about 1,000 individuals. The organ chamber is on the north of the chancel, the vestry on the south. The roof is open timbered, and lofty. The pulpit is of Caen stone, with polished red marble columns and carved capitals. The reading desk is of oak. Many of the internal fittings and furniture have been presented by those who have taken an interest in the erection. The designs were prepared by Messrs. Hayley and Son, and the contract was taken by Mr. Joseph Grason, of Bradford. It is proposed to build a parsonage immediately, for which Mr. J. M. Taylor is the architect.

Berkeley.—*Proposed Restoration of the Church.*—Lord Fitzhardinge, it is stated, has given instructions, in the carrying out of this undertaking, to have the work restored, as far as possible, to its old state, merely washing off the whitewash and colouring, and carefully cleaning the Early English capitals of the arcades, and painting and gilding them after the ancient manner, one of them having been found with sufficient of the ancient colouring to give the clue to its restoration. These arches and capitals are among the most beautiful examples in the country. The pavement will be taken up and relaid to its ancient level, and the incised slabs refixed in their present positions. A new carved stone pulpit, with figures and marble shafts, will be placed outside the screen, and there will be a new carved oak reading desk. The organ and gallery will be removed, and the western windows opened and repaired, the organ being refixed at the north aisle. The whole of the church will be re-pewed with low oak sittings. The stonework is to be repaired, the windows re-glazed, the roughest beaten off the walls, pointed, and repaired. The chancel is not to be done at present. The roofs are to be thoroughly repaired and restored. The work of restoration is to be under the superintendence of Messrs. Popes and Bindon, of Bristol. The estimated cost is about £2,000.

Welton Church.—The parish church of Welton is about to be restored and enlarged, and the whole of the cost, about £6,000, will be defrayed through the liberality of Miss Bradley, of Welton. The church was erected, it is supposed, about the time of William Rufus, dedicated to St. Helena, the mother of Constantine the Great, and has been restored several times, the last being about the year 1828.

North Bradley Church.—This parish church, situated about three miles from Trowbridge, having fallen into a state of decay, it was recently decided to have the whole edifice thoroughly restored. The expenses were estimated by the architect, Mr. T. W. Wyatt, at £1,600. In pulling down the edifice, the builders, J. Davis and Son, of Frome, found the old foundations of the church were built upon arches, under which were vaults. When the workmen arrived at this, the whole crumbled in. It at once became a question whether these insecure foundations should be repaired, or new ones placed there. As this unforeseen difficulty was not anticipated in the contract, it was determined to lay new foundations. A few days since the foundation-stone was laid. The nave is of the Early Transition period, and the chapels and tower of the Perpendicular. The church is supposed to have been founded in 1100, and was the gift of King Henry to the College of Winchester.

King's Cliffe, Northamptonshire.—Mr. Browning, architect, of Stamford, is about to invite tenders for the restoration of Cliffe Church, the tower of which is Early Norman.

Beneden.—This church, dedicated to St. George, has been restored, and was reopened on Sunday last. It consists of chancel, chancel chapels, and nave, and side aisles. The date of the building of the church appears to have been about the end of the fourteenth or beginning of the fifteenth century. In 1672 the church was struck by lightning and destroyed. It was rebuilt in a debased style. The arcade separating the nave from the aisles consisting of Ionic columns and Italian moulded arches; while over the nave was a semicircular plastered ceiling upon wooden ribs, with tie beams across. The tower at the west end has in it a western window, and one of the principal entrances; and these have been restored and thrown open to the interior—a belfry chamber filling the space beneath the tower, with an open arch into the nave, which has five bays; the pillars are octagonal, with plain capitals. The open roof is supported by oaken timbers, which rest upon carved corbels, representing English foliage and fruits. The chancel aisles have two bays, the pillars of which are clustered, and have carved capitals. In the chancel are benches for the choir, and on the north side is the organ. The roof is panelled, with moulded ribs. The chancel proper is paved with Minton's tiles, and has a reredos with gilt and chromatic emblazonings. The lower part of the east window is divided into eight compartments, representing the later scenes in the life of the Saviour. The upper part of the tracery is filled in with angels; the sign of the Holy Ghost being at the extreme elevation. The pulpit is of Bath stone, supported upon columns, and the panels on each side have diapered work in recessed arches. It is placed on the north side of the chancel arch, which has at the springing on each side two sculptured angels. The font is of Caen stone, appropriately decorated. All the seats are open, and will accommodate 480 adults and 80 children. The whole of the windows which have not been replaced by new ones have undergone a thorough restoration; and the stonework of the walls generally has been repaired.

The New Church for Jarrow Docks.—The committee for building this new church have just issued a report. The work undertaken by them is in an advanced and satisfactory state. The sum of £1,742 4s. 2d. has been expended on the works up to the present date. The builder is bound to complete the undertaking by the 8th day of June next, and it is expected that the consecration will take place in July.

Leamington.—*New Roman Catholic Church.*—The works of this structure have been commenced. The edifice will be 121 feet long, 56 feet wide across the aisles, and 80 feet across the transepts. The nave will be 32 feet wide, separated from the aisles by arcades of five arches, and will be crowned by a clerestory, which together make a height of nearly 50 feet. The roof is waggon-shaped, which will give the interior a total height of 60 feet. There are stone altars in a row at the east end; and ultimately it is intended to erect a tower, detached from the church, 24 feet square, and 150 feet high. At the end of the church sufficient ground is reserved for a quadrangle 60 feet square, surrounded by presbytery, schools, and cloisters. The building is designed in the style of the first half of the thirteenth century, constructed of red brick, relieved by bands of Warwick stone, with dressings of Bath stone. The interior is lined with red brick, with stone bands, and the arcades and dressings are also executed in Bath stone. The exterior, the roof of which is covered with tiles, will be very simple. It will possess scarcely any ornament beyond what the construction of the building necessitates. For the interior have been reserved all the resources that the money to be expended places at the disposal of the architect. The outlay upon this portion of the work will be about £5,000. The architect is Mr. Henry Clutton; the contractor is W. Gascoyne, Leamington.

York.—Some time ago, plans were deposited for the erection of a new Roman Catholic Church and Presbytery, upon the site now occupied by the Roman Catholic Church of St. Wilfred, York. Tenders for the erection of the edifice will be advertised for in the course of a few weeks. We hear that arrangements are being made for the pulling down of the present chapel, presbytery, and adjoining house in the course of the next month. The church is to be Gothic. In the south-west front is to be an elaborately carved door-way, with windows above, surmounted by an oriel window. Over the south-west corner of the church will rise a tower to the height of 140 feet. The internal arrangements of the church will consist of a nave and two aisles, with a large apsidal sanctuary, having a lady-chapel on the north-west side and a large vestry on the north-east. There will be an organ gallery over the west front, and the aisles will be lighted by clerestory windows. Mr. Goldie is the architect.

Derry Cathedral.—The works in the interior of Derry Cathedral, which have been so long in hand, are at last rapidly approaching completion. The entrance to the church is by a vestibule, having traceried panels, and doors filled with plate glass. The floors of the porch, vestibule, aisle, and chancel are laid with Minton's encaustic tiles. The stalls for the dean and prebendaries are placed at the west end, and the bishop's throne is near the east, almost opposite the pulpit. It is octagonal in form, surmounted by a ribbed canopy, terminating in a crocketed spire of open work. The old pews are replaced by open benches, the backs of which are filled in with perpendicular tracery. The bench ends are finished with carved poppy-heads. The western gallery affords sittings for about 120 persons, exclusive of the accommodation required by the organist and choir. The whole of the fittings and interior woodwork are of Riga oak.

CHAPELS.

Dorchester.—*The Dorset County Hospital Chapel.*—The little chapel which has recently been added to the Dorset County Hospital was opened on Wednesday se'nnight. The new chapel is situated on the north-east corner of

the pile of hospital, and forms a continuation of the Bankes' wing. It is in the early English style of architecture, built of Ridgway random coursing, with Portland stone dressing, surmounted with a bell turret and spire. At the east end there is a large three-light window, with tracery; lancet windows are inserted on each side. The roof is formed of semicircular ribs, with diagonal boarding. A gallery at the west end has been constructed over the lobby entrance from the men's ward to afford extra accommodation, and this communicates direct to the women's ward on the upper story. The fittings are of red deal and pine, stained and varnished, the open benches affording seats for about eighty. Under the chapel there is a lobby open to the yard by two large arches, for the patients to resort in bad weather. Mr. B. Ferrey is the architect; the work has been executed by Mr. Wellspring, Dorchester.

Keal.—New Wesleyan Chapel.—The first stone of a new Wesleyan chapel about to be erected at Keal was laid a few days since.

Clifton Wesleyan Chapel.—We understand that, on Tuesday, the foundation stone of a new Wesleyan Chapel was laid on a site in the Queen's-road, Clifton. The building is in the Gothic style of the 14th century. The plan of the chapel is a parallelogram 85 feet long by 40 feet wide, including front lobby, and there will be a gallery at the western end. A lobby under the gallery extends the entire width of the chapel, and is entered from the outside by a deeply-recessed doorway under a canopied gablet in front, and through a porch on the south side. A turret on the north side contains the entrance and staircase to gallery. The chapel is lighted by three large traceried windows in the west end, and by two-light windows on each side. There will also be a circular window in the gable of the east end. The roof will be open, the trusses being arched, and bearing on freestone shafts, with carved capitals and bases, which will rest on carved corbels. The ground on which the chapel is being erected having been partly quarried, and filled in with earth, it was necessary to excavate to a considerable depth before a proper foundation could be obtained, and it was, consequently, determined to form a large room below the chapel floor. This room will be the entire area of the chapel, and 15 ft. high and will be lighted by windows on each side. There will be a vestry 31 ft. by 17 ft. on the same floor as the lower room, and two smaller vestries on the chapel floor. The chapel will accommodate about 700 persons. The building will be faced with freestone, with courses of red or gray stone. The architects are Messrs. Fosters and Wood, of Bristol.

West Ashling, Sussex.—A chapel is about to be erected at West Ashling, Sussex, from designs by Mr. Horatio N. Goulty, architect, Brighton. An interesting circumstance in connection with its erection is that the walls are to be built of the stone that once formed the tower and spire of Chichester Cathedral. It is to be built in the early English style, and will accommodate 300 on the ground floor—provision being made for the erection of a gallery at a future time.

SCHOOLS.

Abbey-lane, Saffron Walden.—Additions are being made to the school-room just completed at Abbey-lane, Saffron Walden, Essex, by the erection of an infant class-room and two separate rooms for senior scholars. The work is being carried on by Mr. Wright, the contractor for the original building, under the direction, and from the designs of, Mr. Horatio N. Goulty, architect, Brighton.

Windsor Royal Free and Industrial Schools.—The new building recently erected for these combined institutions was formally inaugurated on Monday. The Windsor Free School was originally established in 1705, the number of scholars at first contemplated being 40 boys and 30 girls. During the next century the institution carried on a useful work, and its funds were gradually augmented by successive donors, till they nearly reached £6,000. The population of Windsor having, concurrently with these changes, greatly increased, in 1819 the trustees applied to the Court of Chancery to be allowed to extend the charity so as to include 100 boys and 100 girls. Failing in this application, they, however, then established a National School, and it has long been felt desirable that the two kindred institutions should be amalgamated. The limited and inconvenient nature of the old buildings has hitherto been a bar to the full carrying out of that project; but their union has at length been consummated, under the sanction of the Charity Commissioners, by the location of the two schools upon the same site, and, in fact, under the same roof, their joint title being "The Windsor Royal Free and Industrial Schools." The building, which is calculated to accommodate 500 scholars of both sexes, is a plain red brick structure. The original plan embraced greater architectural pretensions, but the Government, as a condition to the bestowal of its grant in aid of the building fund, insisted on the rigid exclusion of all ornamentation from an edifice designed for a strictly charitable purpose. The boys' school is on the ground floor, and the girls' school above, and both are admirably adapted for their end. The boys will be taught gardening and other industrial employments; while the girls are to be fitted for domestic service by being trained in cooking, washing, nursing, &c. The total cost of the site, buildings, and fittings is £4,898.

Ashton-under-Lyne.—New Independent Schools.—These new schools, the foundation-stone of which was laid twelve months since, have just been opened. The main feature of the new building, internally, is the large school-room, the dimensions of which are 100 feet by 50 feet (exclusive of recesses on each side), and 25 feet high to the tie beams. Including the recesses, the extreme internal dimensions are 116 feet by 70 feet, and the centre portion of the ceiling (which rises into the roof) is 35 feet high. Each end recess is occupied by a platform 4 feet high; that at the east end for speakers or lecturers, and the opposite platform for an organ. The north-side recess is separated from the room by a partition, and is divided into two compartments for the use respectively of secretary and librarian. Each side recess has two sets of coupled iron columns with white and gold foliated capitals; and from these columns spring a central and two smaller arches, with paneled soffits. Ingress and egress to and from the great room are by five doorways, four of which communicate with two stone staircases, and the other with a lesser stone staircase, intended for access to the speakers' platform and reserved seats. In connection with the speakers' platform is an ante-room, also entered from the platform staircase. This room is fitted up for a young men's class, and measures 36 feet by 24 feet. Underneath, and on the ground floor, is a class-room of the same dimensions, which contains a gallery for 200 infants, and is very lofty. On the ground floor of the building are ten class-rooms, of varied sizes, the largest being 20 feet by 14 feet, and the smallest 14 feet by 13 feet. These rooms are in two sets, one for young men and the other for young women, corresponding; each set is approached by separate entrances and corridors. In the centre of the ground floor, and dividing the sets of class-rooms, is a lecture-room, arranged in the form of an amphitheatre, with rising seats, capable of seating 500 persons. This room is entered by folding-doors from

each corridor, and private entrances are provided to the lecturers' platform. The style is Italian, of white and red bricks. The cost of the whole undertaking will be about £10,000. The works have been executed from the designs, and under the superintendence of Messrs. Paull and Ayliffe, architects; and the general contractors are J. and J. Longson, of Stockport.

Reviews.

An Account, with Illustrative Sketches, of Cranston's Patented Buildings as applied to Horticulture. 4to.; Temple-row West, Birmingham.

THIS "account" shows, in a series of lithographed sketches, with descriptive matter, a mode proposed by the author for the construction of horticultural buildings on a patented principle, applicable to both large and small erections. Of the former, one erected at King's Acre, Hereford, is illustrated, and would appear to combine practical utility with some artistic effect. The smallest structure shown is a lean-to, 7 feet wide, erected against a garden wall. The principle of its construction is thus described:—

There are four compartments of rafters filled with glass, each $3\frac{1}{2}$ feet long, three compartments towards the front, and one over the wall facing the contrary way, and these divisions are separated by what has been called, to distinguish them clearly, "radial ribs," fixed edgewise, and running lengthways of the building under the lower ends of the bottom rafters, and between the top and bottom ends of all the others; each radial rib, in all cases, irrespective of the shape or size of the building in which it is, or any other consideration whatever, being perforated for ventilation, by small openings close to each other, from end to end, and having a valvular apparatus on the inside of it, for properly regulating the ingress and egress of air. To the bottom edge of each radial rib the upper ends of the rafters are secured, and upon the top side of it the feet of the rafters rest. The external aspect of a roof so framed presents to the eye a series of planes fitted with glass, divided vertically by small wood rafters, and horizontally by the radial ribs, also of wood, so fixed to make the top of one plane recede a few inches, that the lower end of the plane immediately above it might project and overhang. The radial ribs are themselves fixed to other timbers, put together in the shape necessary to receive them, and which act as "principals," spanning the house internally at intervals of about eight feet.

In other words, the sides or roof of the house is tilted about every three or four feet, the tilting-piece being perforated for ventilation. The construction is simple—

So that when it is necessary to pull down and re-erect the house this can be done by any workman without waste of wood or glass, each rafter, as well as every radial rib or other part, being screwed together again as firmly as ever. Any gentleman fond of labour may, with the assistance of his servant, either pull down and re-erect one of these houses, or put it up in the first instance; for the pieces of which it is formed will fall into their right positions, to be fixed there by screws, as readily as an iron bedstead is fitted together. In new houses all the timbers will be numbered and marked, the screw-holes bored, and everything done before they are packed up and sent off, to make the work of erection as easy as need be.

On Iron Breakwaters and Piers. By E. B. WEBB, Civil Engineer. 4to.; Lockwood and Co.

THE writer of this work believes that he has designed a breakwater free from the disadvantages which attend the employment of either solid or floating structures. In its simplest form it is described as being "supported on cast-iron cylindrical piles, sunk into the ground either by screws or by the process adopted in the construction of the Morecambe Bay Viaducts." The piles are filled internally, to above high-water mark, with concrete; to these are fixed girders, or beams of iron, placed, as a convenient distance, at 10 feet apart. The girders have sockets, in which are fixed the ends of pipes forming that portion of the surface of the breakwater which rises above low-water mark. The pipes resemble gas or water mains, but are of cheaper construction. The ends of these pipes are securely fixed in the sockets of the girders by crescent wooden wedges, which, while keeping up the ends of the pipes, relieve the girders from the effect which the blows of the waves acting upon iron against iron might otherwise produce. The space between the pipes admit a certain portion of the waves to pass through, diminishing the force of the blow of the waves and preventing any disturbance of the surface water inside the harbour. A set of similar pipes is fixed vertically between the piles in the front row to a depth varying, according to circumstances, from 6 to 12 or more feet below low water.

The author claims, for the proposed breakwater, durability, strength, power to create smooth water harbours, facility of construction, alteration and repair, and economy of cost.

CHATHAM BARRACKS.—The Admiralty have decided on the immediate enlargement of the barracks, in accordance with the plans laid before Parliament some three or four years back, when the sum of £60,000 was taken in the Estimates for the proposed work. Of this amount a considerable sum has already been expended in the purchase of the land on which the additional barrack buildings will be erected, the proposed enlargement necessitating the removal of one large hotel, one tavern, and about twenty private houses. The whole of these have been taken down, and the site cleared as far as the boundary wall of St. Mary's parish church, to which the new barracks will extend. The plans for the proposed enlargement have been approved by the Admiralty, and the works will be immediately commenced. The block of buildings forming the right wing of the present barracks, inhabited principally by the single officers of the division, will be taken down and removed as far as the boundary wall of the church, which will increase the barrack parade-ground to about twice its present size. The field-officers' quarters, as well as the barracks and other offices, will be removed to another locality. It is also contemplated to take in a portion of Chatham Dockyard, and to throw the barracks back; the public road leading to the New-stairs will not be blocked up, but communication with that portion of the buildings will be maintained either by means of an arch thrown over the road, or by an underground passage. The new barrack-buildings will provide accommodation for 700 additional marines.

GIBSON'S TINTED VENUS.—This celebrated statue is about to be lent by its owner to the Commissioners of the International Exhibition. It is by many supposed that Mr. Gibson has tinted his statues to represent life, whereas he has only endeavoured by colour to soften the general effect, and to give the appearance of ivory, a material much used by the ancients. This statue was executed ten years ago for Mr. Robert Berthou-Preston, and by his permission remained in Gibson's studio at Rome until 1859, since which time it has been in its owner's possession, although never exhibited until the present occasion.

Correspondence.

BIRMINGHAM AND MIDLAND INSTITUTE.

SIR,—Some of your readers have probably seen with surprise a recent advertisement inviting architects to send in designs to finish the Birmingham and Midland Institute, of which I am the architect.

In the year 1855 a limited competition was entered into for this building by nine architects (one of whom is since dead), the condition being that the selected architect should receive no premium, but should be entrusted with the professional superintendence of the work. My designs were chosen, but, owing to financial difficulties, only one half of the building could be then erected, and this was completed some years since from my drawings and under my superintendence.

The Town Council of Birmingham, being now desirous of erecting a free library, propose to build it in connection with the Institute, and thus complete the latter building.

At their request I have furnished them with a complete set of upwards of fifty working and other drawings, specifications, &c., but on advertising for tenders it has proved impossible to erect the building for the amount of my first rough estimate, which was based upon the cost of the first half of the works. On this fact being ascertained, I at once offered to forego all claim for remuneration for what I had done, and to prepare new plans to suit the financial exigencies of the case.

The first part of my offer was at once accepted, and the only answer to the latter has been an invitation to other architects to furnish plans to complete the building, according to my elevation, which invitation is accompanied by a block plan, copied from one of mine, which the Council happen to possess.

I cannot suppose that such an invitation will be responded to by any one who either respects himself or the profession to which he belongs; but, feeling that on public grounds the matter ought not to rest where it is, I have placed it in the hands of my solicitor, and am advised that the proposed competition cannot be legally carried out, and that those who may take part in it will consequently lose their time and labour.

You will see by the enclosed statement the opinion of most of the competitors in the original competition in 1855, and I have been assured by those of the latter whose names are not appended to the statement that they fully concur in its views.

EDWARD M. BARRY.

I, Old Palace-yard, 23rd April, 1862.

ENCLOSURE.

March, 1862.

Having furnished designs in the original competition for the Birmingham and Midland Institute, I am of opinion that it would not only be unjust to Mr. Barry to entrust the completion of his design to other hands, but that such a course would be a direct breach of the engagement entered into by the Institute at the time of the competition, to entrust the architect of the selected design with the professional superintendence of the building.

(Signed by)

H. BOWMAN.

J. GIBSON.

E. L'ANSON.

J. JAMES.

J. LOCKYER.

TENDERS.

BATH STONE OF BEST QUALITY.—Randell and Saunders, quarrymen and stone merchants, Bath. List of prices at the quarries and depôts, also cost for transit to any part of the United Kingdom, furnished on application to Bath Stone Office, Corsham, Wilts.

BATH STONE OF BEST QUALITY.—Box-hill ground stone; Farleigh Down, ditto; Combe Down, ditto.—Stone and Sons beg to inform architects, builders, and others, that they are in a position to supply the above-named article in block or ashlar, of the very best quality, direct from their own works. Delivered to any part, either by rail or water carriage, on the most reasonable terms. Prices furnished on application at the Bath Stone Office, Widocombe, Bath.

PIER, BLACKPOOL.

The tender (£11,540) of Messrs. Laidlaw and Son, of Glasgow, has been accepted for the construction of the Blackpool Promenade Pier. Messrs. J. B. and E. Birch, engineers. Quantities supplied by Messrs. R. L. Curtis and Son.

SCHOOLS, EXETER.

For building new Wesleyan schools, in King-street, Exeter. Mr. W. Blackmore, architect.

Bradford	£1,120	Gardner	£980
Moass and Sons	1,065	Moore	932
Mitchell	1,056	Woodman	870
Tozer	1,029	Grant and Son (accepted)	715
Ware and Son	996		

FARM BUILDINGS, WIGSTON.

For erecting farm buildings, at Wigston, for A. Cooper, Esq. Mr. William Millican, architect, Leicester.

	Amount of Tender.	Allow for old Materials.	Add for Carriage.
Hutchinson	£650 0 0	£15 0 0	£40 0 0
Sharpe	645 0 0	14 5 0	40 0 0
Thurby	644 0 0	20 10 0	67 10 0
Porter	639 18 0	—	35 0 0
Glover	627 0 0	20 0 0	30 0 0
J. Cox	616 10 0	14 0 0	39 0 0
Bell	606 10 7	7 0 0	20 0 0
Duxbury	603 0 0	16 10 0	40 0 0
Dawkins	573 0 0	16 0 0	26 18 0
Wykes	569 0 0	19 0 0	30 0 0

For erecting new screen wall and Portland stone balustrade; sundry alterations to house at Whitmore Farm; and various other works on the estate of Thomas Holloway, Esq., at Snodgrass Hill, Berks. Alfred Smith, architect, Buckingham-street, Adelphi. Woodward

Woodward	£1,993	Bowley Brothers	£1,700
Oades	1,989	Colls and Co. (accepted)	1,644
Sewell and Son	1,987		

HOTEL, ROCHESTER.

For the erection of a new hotel, for Mr. Budden, on the Strood side of Rochester-bridge.

Spicer	£1,990	Foord and Sons	£1,706
Wilkins	1,950	Naylor	1,685
Hall	1,925	Anscombe	1,617
Stump	1,900		

COACH-HOUSE, &c., SUSSEX.

For erecting a coach-house, stabling, &c., for Mr. J. Vallance, Kingsland, Hurstpierpoint, Sussex. Mr. H. N. Gaulty, architect, Brighton. Mr. Parker (accepted)

£420

BANK, NENAGH.

For the erection of a new Provincial Bank, at Nenagh. Mr. W. G. Murray, architect. J. Hunter, Brandon

£3,010

£2,682

2,942

2,630

2,600

ALMSHOUSES, DONEGAL.

For repairs, &c., to the Widows' Almshouses, at Raphoe, Co. Donegal. Mr. P. Louch, architect, Londonderry. Oliphant and Campbell

£297 10 0

255 10 6

255 0 0

For shops, dwelling-houses, and warehouse in Paternoster-row, for Messrs. Knight and Sons. Andrew Wilson, Esq., architect.

Axford

£5,214

4,987

4,650

MEETING-HOUSE, ISLINGTON.

For congregational meeting-house, Barnsbury, Islington. Mr. James Wesley Reed, architect. Warne

£2,490

2,433

CHAPEL, ENFIELD.

For additions to a chapel, Baker-street, Enfield. Mr. J. E. Knightly, architect. Quantities supplied.

Patman

£1,212

1,197

1,167

FARM BUILDINGS, SUSSEX.

For alterations and additions to Place Farm, Folkington, Sussex. Mr. Robert Blessey, architect.

Brickwork, Mason's Work, &c.—Thompson

£161 10 0

134 12 6

63 9 6

Total

359 12 0

DWELLING-HOUSE, KENSINGTON.

For finishing No. 26, Gore-road, Kensington. Mr. Robert Blessey, architect. Fawcett (accepted)

£1,540

STABLING, &c., KENSINGTON.

For erecting stabling, &c., to No. 28, Gore-road, Kensington. Mr. Robert Blessey, architect.

Fawcett (accepted)

£295

WAREHOUSE, WAPPING.

For the erection of a warehouse and embankment at Wapping, for E. Phillips, Esq. Mr. Henry Harrison, architect. Quantities supplied by Mr. F. Warburton Stent.

Piper and Wheeler

£8,760

8,682

8,558

COMPETITIONS OPEN.

CLOCK TOWER.

HASTINGS.—The Prince Consort Memorial Committee appointed to carry out the above object at Hastings invite architects and others to submit designs for the same. The sum of £10 10s. will be paid for the design approved of by the Committee, which design will then become the property of the Committee. Particulars from Robert Growse, town clerk, High-street, Hastings, to whom designs must be delivered before the 1st May.

CEMETERY WORKS.

CHELTENHAM.—The Burial Board for the borough of Cheltenham require plans, estimates, and general specifications, for the laying out, constructing roads and footpaths, erecting buildings on, fencing in and planting, certain lands purchased by them for a cemetery, the superficial area of which is eighteen acres. The designs must include a ground-plan, showing the sites of the different buildings required, the courses of the carriage-roads and walks, the courses, also, of the drains, the division of the land into the several sectional burial-places, and the subdivision of such places into plots for burial. The plan, also, should show the manner proposed for the ornamental planting of the land. Should the intentions of the designers as to the laying out of the land render it necessary, sections of the earthwork required, and formation of the ground surface as proposed to be made, should be provided, and such other details and suggestions as the competitors may think necessary to illustrate and make clear their designs. Plans, elevations, and sections must be provided for two chapels, dead-house, lodge, gates, and walls at entrances, &c. Specifications must accompany the plans, describing the manner of construction, the class and substance of material in the several buildings, and estimates of their several costs. Plans, specifications, and estimates of the manner of laying out and planting the site, of forming and making the roads and footpaths, and of the character and cost of fencing the site, to be also provided. Plans, &c., may be either for forming and finishing the roads and footpaths, laying out and planting the site, or for fencing the site, or for the chapels and other buildings before mentioned, and the entrance-walls and gates, or the whole of the works, may be combined in the plans, &c., of any competitor; but the Board reserve the right of selection at their discretion from the plans, &c., submitted to them. A premium of forty guineas will be given for the best designs, specifications, and estimates for the whole of the works sent in; and a premium of twenty guineas for the second-best designs, specifications, and estimates for the whole of the works. Should designs, &c., be selected for part of the works only, a fair arrangement as to the premium will be made by the Board, with the successful competitors. The plans, &c., selected to become the property of the Board. The plans, &c., are to be distinguished by a mark or motto, and accompanying them a sealed envelope, having the same mark or motto outside, and within the name and address of the designer, and the terms on which he will superintend and supply his professional services in execution of the works. Plans and particulars of the land may be had of Mr. Henry Dangerfield, borough surveyor. The plans and other documents to be sent to G. E. Williams, clerk to the Board, Public Offices, Cheltenham, on or before the 29th May.

SCHOOLS, &c.

DURHAM.—Plans and elevations are wanted for [schools and teachers' residences, in conformity with the rules of the Committee of Council on Education, at Stockton-on-Tees, Durham. The boy's school to accommodate 250; the girls' school, 200; and the infants' school, 200. Three teachers' residences. Ten pounds will be given for the most approved set of plans. Further information and tracing of site may be obtained of William Skinner, Esq., Stockton-on-Tees, to whom plans, with estimates of costs, must be sent, not later than the 30th April.

LIBRARY AND READING ROOMS.

BIRMINGHAM.—The Free Libraries' Committee of the Council of the Borough require plans, sections, specifications, and estimates for the erection of a free reference library and reading-rooms, lending-library and news-room, and gallery of art, upon the place of vacant land adjoining the Midland Institute Building, with an elevation uniform with the said building. Intending competitors are requested to send in their plans, specifications, and estimates, under cover to Thomas Staudbridge, town clerk, Town clerk's office, Temple-street, endorsed "Plans for Free Reference Library Buildings," on or before the 16th June. Particulars of the accommodation required, and of the conditions of competition, together with a lithographed plan of the site, may be obtained on application.

CHAPEL.

LEICESTER.—A premium of ten guineas is offered for the best design for a Wesleyan chapel, to be built in Leicester, capable of holding 900 persons. Architects wishing to compete may, upon application to Mr. H. Wale, 56, New-walk, Leicester, receive a plan of the site, and instructions and any other information required. The plans to be forwarded, carriage free, addressed to Mr. H. Wale, on or before the 1st May, accompanied with a sealed envelope, containing the architect's name, and bearing a motto corresponding with one to be placed on his design.

MEMORIAL.

GLOUCESTER.—The committee appointed to carry out the Hooper Memorial, at Gloucester, invite sculptors to submit models of designs for the figure of Bishop Hooper, which is intended to be placed under the canopy of the monument just erected in the churchyard of St. Mary de Lode, Gloucester. The models or statuettes to be carved in stone, and to be one-quarter the real height (7 feet). The author of the best design, approved by the committee, will be appointed to execute the full-sized figure; and the sum of ten guineas will be awarded for the second-best design.

DRAINAGE.

KINGSTON.—The Corporation of the borough of Kingston-upon-Thames invite engineers and others to submit plans, specifications, and estimates for a thorough and complete system of drainage of the borough, and offer a premium of £100 for the plan approved, retaining the liberty to carry it out or not. The plan approved to become the property of the corporation. The system to be as far as practicable with existing drains, the plans and descriptions of which are at the Town Clerk's office. The plans, &c., stating also the commission for carrying out the works, to be sent to the Town Clerk's office on or before the 17th day of May next.

COMPETITION AWARDED.

SCHOOLS.—In a limited competition for "The Warehousemen and Clerk's Schools," the Committee have awarded the premium of fifty guineas to Mr. James L. Pedley, architect, 36, Southampton-buildings, Chancery-lane.

CONTRACTS OPEN.

PUBLIC BUILDINGS.

EDINBURGH.—For the erection of a large building in Edinburgh. Plans, &c., with Mr. Henderson, architect, 7, Hill-street, Edinburgh. Tenders to 15th of May.

LIMEHOUSE.—For the erection of new offices and board-room, in White Horse-street, Commercial-road East, for the District Board of Works. Drawings, &c., upon application to Mr. Charles Danch, architect, White Horse-street, Commercial-road East. Tenders are to be delivered at the offices of the Board not later than 12 o'clock on the 5th day of May.

DARLINGTON.—For the erection of Darlington new market, town offices, and clock tower. Plans, &c., with George Dickinson, C.E., Surveyor to the Board, Central-buildings, Darlington, or at the office of Mr. Alfred Waterhouse, architect, Mount-street, Manchester. Tenders to Mr. Dickinson, endorsed "Tender for Darlington Market, &c.," and addressed to the Chairman of the Darlington Local Board of Health, on or before 5th May.

BANK.

LINCOLNSHIRE.—For the erection of a bank and manager's house at Spalding, for the Stamford, Spalding, and Boston Banking Company. Particulars from Mr. William Eve, surveyor, 3, Union-court, Old Broad-street, E.C. Tenders on or before the 17th May.

MARKET BUILDINGS.

BATH.—For the erection of iron roofs, masonry, and other works involved in the reconstruction of the Bath provision markets. Plans, &c., on application to Hicks and Isaac, architects, 13, Northgate-street, Bath, from May 3. Sealed tenders to the Town Clerk, Guildhall, Bath, for the separate trades, endorsed, "Tenders for the reconstruction of Markets," by the 15th of May.

INFIRMARY.

DEAL.—For erecting the Deal and Walmer Dispensary and Infirmary. Plans, &c., at the Mariners' Reading-rooms, Beach-street, Deal, to the 28th April. Tenders, under cover, to the "Committee of the Deal and Walmer Dispensary and Infirmary, Beach-street, Deal," endorsed "Tender for Building," on or before 1st May.

MAIDSTONE.—For the erection of a new wing to the West Kent Infirmary, Maidstone; the addition of an upper story to the present central building, and other works. Plans, &c., with Henry Blandford, architect, Maidstone. Tenders, sealed and endorsed "Tender for Works, West Kent Infirmary," to the secretary at the Infirmary, on May 3rd, by 2 p.m.

WORKHOUSES.

YORKSHIRE.—For the building of a new workhouse at Pateley Bridge, Yorkshire. Drawings, &c., at the offices of the architect, 93, Micklegate, York, from the 28th inst. to the 2nd May, and at the Board-room, Pateley Bridge, from the 3rd to the 9th of May, both inclusive. Tenders to the Clerk of the Guardians, Pateley Bridge, on or before the 9th May. Schedules of quantities can be obtained of the clerk, at the Board-room, Pateley Bridge; and of Mr. B. Wormald, surveyor, 23, Skeldergate, York, on and after the 2nd May.

YORKSHIRE.—For the erection of a new union workhouse, at Wetherby, in the county of York. Drawings, &c., with James Coates, jun. clerk to the Board of Guardians of the Wetherby Union, until the 28th inst. Tenders sealed, endorsed "Tender," and addressed to Mr. Coates, will be received on or before the 28th inst.

CHURCHES.

NORFOLK.—For erecting a new Methodist Free church, Holt, Norfolk. Plans, &c., at the office of Mr. Jeckyll, the architect, Queen-street, Norwich. Combined or separate tenders for different parts of the works to be sealed and delivered to Mr. W. Leggett, Holt, on or before 10 o'clock of the 30th of April, endorsed, "Tender for Methodist Free Church."

BERKS.—For restoring and part rebuilding the parish church of Wokingham, Berks (where there is a junction station of branches of the South Eastern and South-Western Railways). Plans, &c., at the office of Mr. W. Wheeler, solicitor, Wokingham, till the 13th. Sealed tenders directed to Mr. Wheeler, on or before the 29th inst.

DWELLING HOUSE.

GLOUCESTERSHIRE.—For the erection and completion of a villa residence, with stable and coach-house, proposed to be built near Stroud, Gloucestershire. Drawings, &c., at the offices of Messrs. Franklin and Clissold, architects, Stroud. Tenders to be delivered to Messrs. Franklin and Clissold, on or before the 28th inst.

POLICE STATIONS.

SIDMOUTH.—For the erection of a police station, &c., at Sidmouth, Devonshire. Plans, &c., with Henry Ford, Clerk of the Peace, Castle of Exeter, and at the office of Messrs. Radford and Williams, Clerks to the Justices, Sidmouth. Sealed tenders, endorsed "Tender for Sidmouth Police Station," to be sent to Mr. Ford, on or before the 3rd June.

DEVON.—For the erection of a police station, &c., at Holworthy, Devonshire. Plans, &c., with Henry Ford, clerk of the Peace, Castle of Exeter, and at the office of Mr. A. Cohan, Clerk to Justices, Holworthy. Sealed tenders, endorsed "Tender for Holworthy Police Station," to be sent to Mr. Ford, on or before the 29th April.

QUAY.

ROCHESTER.—For the erection for the Corporation of Rochester, of a town-quay and landing-place, at the said city of Rochester. Drawings, &c., at the office of Mr. Henry

Andrews, surveyor, Rochester. A bill of quantities of the proposed work can be had of the surveyor on payment of fee of 10s. 6d. Tenders to be sent to the offices of Richard Prall, jun., town clerk, High street, Rochester, not later than twelve noon, on the 30th April instant, sealed and directed to the Mayor, Aldermen, and citizens of the city of Rochester, and endorsed "Tender for erection of Town-quay and landing-place."

FARM BUILDINGS.

LANCASHIRE.—For the erection of several farm buildings, at Ince Blundell and Formby. Plans, &c., with Mr. Madden, foreman of joiners, Ince Blundell. Tenders to be sent before the 10th May, to Mr. T. P. Fisher, steward, Ince Blundell.

BREAKWATER.

ISLE OF MAN.—For the construction of a breakwater, of 1,100 feet length, or thereby, at the Harbour of Douglas. Plans, &c., at the offices of the engineer, James Abernethy, Esq., M.L.C.E., 3, Parliament-street, Westminster. Sealed tenders, endorsed "Tenders for Breakwater," to be delivered to Richard Quirk, Receiver-General, Douglas, Isle of Man, on or before the 1st May.

RIVER WORKS.

CAMBRIDGE.—For the repair of the walls of Baitshite Sluice (about three miles below Cambridge), and for supplying the same with new oak doors and floodgates for the Sluice Pen; new bridges over the floodgates and overfall, and other works. Specification with Clement Francis, Clerk of the Conservators, Cambridge. Sealed tenders to Mr. Francis, on or before the 30th inst.

RAILWAY WORKS.

CARLISLE.—For the construction and alteration of works required for the enlargement of the Citadel Station, Carlisle. Drawings, &c., with forms of tender and schedules of prices, at the Citadel Station, on and after the 19th inst. Sealed tenders must be delivered not later than the 29th addressed to the Secretary, at the Citadel Station, and marked "Tender for Works."

CALEDONIAN RAILWAY.—For the construction of the Stonehouse Branch, about 4 miles 38 chains in length. Plans, &c., at the office, in Glasgow, of Mr. George Graham, the Company's engineer, where duplicate schedules and blank forms of tender may be had, price one guinea. An assistant engineer will attend at Stonehouse, on Friday, the 11th, at 12 o'clock, to accompany intending offers over the line. Sealed tenders, addressed to the secretary, at Glasgow, must be lodged with him on or before 28th April.

EXETER.—For the erection of a roof for the new station at Exeter, of the Bristol and Exeter Railway, having an area of about 500 squares. Drawings, &c., at the Engineer's Office, Bristol Terminus, to the 5th of May. Sealed tenders to be addressed to the Secretary, A. Moore, Esq., on or before the 6th May.

DRAINAGE.

SOMERSET.—For certain works to be done for accelerating the draught of water in the river Kenn, or Great River, and improving the drainage of lands in the several parishes of Backwell, Chelvey, Brockley, Nailsea, Yatton, and Kenn affected thereby, and for improving the outlet of the said river at Hook's Ear, in the parish of Kingston Seymour, Somersetshire. Plans, &c., at the offices of Messrs. Townsend and Jeffers, surveyors, Shannon-court, Bristol, under whose superintendence the works are to be carried out. Tenders (marked "Tender for Sewers Work") sealed to be sent to the offices of Messrs. Townsend and Jeffers, before or on the 30th April by 4 p.m.

BRIGHTON.—For constructing a main sewer and outfall in the Brunswick-square and terrace district. Plans, &c., at the office of R. G. Suter, Esq., the surveyor of the Commissioners, at their rooms in Brunswick-street West, Hove. Tenders in writing, sealed, and endorsed, "Brunswick-square and terrace drainage," are to be delivered on or before 5 o'clock on the 30th April, at the offices of Messrs. Hill and Fitzhugh, solicitors, Brighton.

GASWORKS.

KENT.—For the performance of the work required in the extension of their retort-house and coal store, and alterations in other parts of the works, at the Gravesend Gasworks. Plans, &c., at the Company's Works, Gravesend, and further information of Mr. J. Church, C.E., Chelmsford. Forms of tender may be had from Messrs. Southgate and Son, secretaries, Gravesend, and tenders are to be sent or delivered there on or before the 30th instant, marked "Tender for Building."

RESERVOIR.

FYLDE.—For the construction of a reservoir, upon the Grizedale Brook, about three miles from Garstang, and near Scorton Station, on the Lancaster and Preston Railway; and a reservoir near Weeton-lane Ends, about three miles from the Kirkham Station of the Preston and Wyre Railway, for the Fylde Waterworks Company. Plans, &c., and all information obtained at the office of Mr. T. B. Foster, C.E., 23, John Dalton-street, Manchester, from whom specifications and forms of tender can be obtained on payment of 10s. for each reservoir. Tenders must be sent in to Mr. T. A. Wilkinson, the secretary of the Company, at the Fylde Waterworks Office, Kirkham, not later than the 28th inst. The reservoirs will be let in separate contracts.

ROADWORK.

BOOTLE.—For pitching, paving with sets, and macadamising Merton-road, in the township of Bootle. Plans, &c., at the Assistant-Surveyor's office, 3, Phoenix-terrace, Derby-road, Bootle. Sealed tenders addressed to the Chairman of the Board, and to be delivered on or before May 1, at 12 noon.

STABLING, &c.

DUMFRIES.—For stabling and other offices at Drumpark, in the parish of Irongray. Plans, &c., from James McKie, writer, Dumfries, to whom tenders on or before 30th April.

EDINBURGH MONUMENT TO THE 78TH HIGHLANDERS.—This monument has been inaugurated with military honours; it consists of a Celtic cross of Redhall stone, including the pedestal, 27 feet in height. The pedestal is double, and the shaft, with the cross by which it is surmounted, is a monolith 15 feet 6 inches long. It is bordered on all sides with interlaced tracery in the old Celtic fashion, and is covered on three sides—in letters in the style of the 13th century—with the names of 7 officers, 28 non-commissioned officers, and 220 private soldiers of the 78th Regiment, who fell in the Indian mutiny. On three sunk panels, in the lower part of the pedestal, are inscribed the following actions in which the regiment was engaged during the mutiny:—Fintellpore, Aoung, Pandoo, Nuddi, Cawnpore, Ounoo, Busseeratungge, Boorbenkechowkee, Bithoor, Passage of the Ganges, Mungurwar, Alum-Bagh, First Relief of Lucknow, Defence of Lucknow, Defence of Alum-Bagh, capture of Lucknow, Bareilly. On the upper part of the pedestal, fronting the Esplanade, there is a dedicatory inscription in Gaelic, and underneath it the following translation in English: "Sacred to the memory of the officers, non-commissioned officers, and private soldiers of the 78th Highland Regiment, who fell in suppressing the mutiny of the native army of India, in the year 1857 and 1858, this memorial is erected as a tribute of respect by their surviving brother officers and comrades, and by many officers who formerly belonged to the regiment. A.D. 1861."

BRISTOL.—A meeting of the committee formed to promote a local memorial to the late Prince Consort, has been held at the Council-house, Bristol, under the presidency of the Mayor. Subscriptions to the amount of £370 were announced, and full confidence was expressed that the necessary sum would be obtained. In reference to the form of the memorial, it was resolved that a statue should be erected, and if a sufficient amount were subscribed, that the memorial should present a statue and fountain in harmonious combination. With a view of enlisting the co-operation of the working classes, a sub-committee was appointed to open the way to negotiations with some members of their body. A subscription list, it is said, will be shortly issued.

THE INTERNATIONAL EXHIBITION.

ELL has the Poet Laureate written—

"Uplift a thousand voices full and sweet,
In this wide hall with earth's invention stored,
And praise th' invisible universal Lord,
Who lets once more in peace the nations meet,
Where Science, Art and Labour have outpour'd
Their myriad horns of plenty at our feet.

O, silent father of our Kings to be,
Mournd' in this golden hour of jubilee,
For this, for all, we weep our thanks to thee!

The world-compelling plan was thine,
And, lo! the long laborious toils
Of Palace; lo! the giant aisles,
Rich in model and design;
Harvest-tool and husbandry,
Loom and wheel and engine-ry,
Secrets of the sullen mine,
Steel and gold, and corn and wine,
Fable rough, or fairy fine,
Sunny tokens of the Line,
Polar marvels, and a feast
Of wonder, out of West and East,
And shapes and hues of Art divine!
All of beauty, all of use,
That one fair planet can produce,
Brought from under each star,
Blown from over every main,
And mixt as life is mixt with pain,
The works of peace with works of war.

O ye, the wise who think, the wise who reign,
From growing commerce loose her latest chain,
And let the fair white-winged peacemaker fly
To happy havens under all the sky,
And mix the seasons and the golden hours,
Till each man find his own in all men's good,
And all men work in noble brotherhood,
Breakiog their mailed fleets and armed towers,
And ruling by obeying Nature's powers,
And gathering all the fruits of peace and crown'd with all her flowers."

Few there were, yesterday, who heard the "thousand voices" unmoved.

Once again, after an interval of eleven years, England has invited the world to a friendly contest, and throws wide open the doors of the vast building wherein their several contributions have been collected. The show has been inaugurated with all the splendour which royalty can command, although, through the unavoidable absence of the Queen, the ceremony lacked that magnificence which was diffused over the former building. A sense of the nation's loss, as was foreseen, was, moreover, felt by every one present, in that he who made doubts disappear like morning mists before his bright intelligence, and directed the current of our actions, slept his last sleep, and could not welcome the bidden guests, or look upon the consummation of his work. The "father of our kings to be" was silent when the labours upon his great enterprise were ended, but the result has shown that, powerful as was his guiding spirit, the means which he employed for the accomplishment of his ideas were sufficiently self-sustaining to march unflinchingly onwards and fulfil the task they—at his instigation—had undertaken.

When the former International Exhibition was opened, it was fondly hoped that we had entered upon a new era; that the rivalry of the sword and musket was to be exchanged for that of the shuttle and the loom; that the long-nursed deadly feuds of neighbours were to be brushed away by the olive branch; that hands gripped in friendship would close no more in anger against each other; and that even the common sense of nations would teach them lessons which ruin, slaughter, and misery had failed to impress upon them. These Utopian hopes have been dissipated. We must acknowledge the fallacy of these expectations which our hopes had begotten. In the brief interval since 1851 war has cut its deep channels in thousands of human hearts, and has left its track upon the seared face of many countries. We have ourselves passed twice through the fierce fiery ordeal, and our kinsmen over the Atlantic endure it even now with the obstinacy of the Anglo-Saxon race. We must also own that for months the materials for war, in the shape of monster cannon and plated ships, have been most prominent in the minds of our scientific men, and that perhaps the most attractive trophy in the whole collection will prove to be that which is contributed by the successful manufacturer of destructive weapons. It is humiliating to us, as people calling ourselves civilised, to make this confession, but the acknowledgment of its truth need not depress us. It is consolatory to know that even in this branch of manufacture England can maintain her proud pre-eminence amongst the assembled nations, whilst it is satisfactory to reflect that there is enough of more ennobling materials gathered together to convince us that whilst with one arm we can defend the world's sanctuary, we can with the other contribute in no mean degree to the onward movement of civilisation.

The general view of the interior of the new building cannot for one instant be compared to that of its prototype. We remember with regret Osler's Crystal Fountain, and the long stretch of perspective which the eye embraced in the former building, with its admirable coloured surfaces and its well arranged trophies, its green leafy elms and lines of judiciously displayed statues. The new building is short in comparison, and the enclosure of the courts limits the view. There is no connection between the bright colours of the roofs and that of the groups below. The dead green columns destroy the harmony of the internal colour, and the confused disposition of the trophies block out even the limited view of the building.

No art has been shown in placing them. Bell's Egyptian Obelisk is incongruously balanced by a Gothic Drinking Fountain. Both may be, in their respective styles, very excellent, but they have nothing in common with each other which should have justified the Commissioners in placing them, or in allowing them to be placed, in juxtaposition; and Thomas's last work is put into a side court! Gates of the Colebrook Dale Company, surpassing in size and splendour even those which were exhibited in 1851, and which now adorn the long walk of Kensington Gardens, are at the end of the south transept, hidden, or almost so, by neighbouring objects. How different from their deservedly prominent position in the Hyde-park building! As to a view down the nave, such as we obtained from the end gallery through the long range of 1,800 feet in the former building, we must not expect it here. Such a conglomeration of confusion as Cheapside presents when densely crowded we may have, but nothing beyond it.

A few days previous to the opening the eastern dome underwent a most charming transformation. To prevent a reverberation from the orchestra, a tent-like covering was put over it, which completely hid the cold vacant nakedness of the dome. It was really a relief to look upwards with that shield between us and the much vaunted wonder, whilst the alternate pale blue and red tints of the canvas gave a subdued and refreshing tone to all beneath it. Never before was the absurdity of these huge abortions so manifest, as when a simple tent-roof temporarily introduced hid one of them from our sight. We hope that no feeling of false pride will induce the Commissioners again to reveal it, but that a tasteful feature unexpectedly introduced at one end of the building will be repeated at the other.

We cannot avoid the expression of our cordial congratulations to the contractors and their assistants upon the successful completion of their uninterrupted labour. No more striking trophy of undaunted and untiring energy is contained in the building than that which the building itself presents, and no one hardly can appreciate it who has not watched it, as we have done, from the first moment when Messrs. Kelk and Lucas walked over the green turf which it has displaced down to the period when the Duke of Cambridge, amidst a flourish of trumpets, echoed by a salvo of artillery in Hyde-park, announced the opening of the building. Through its various successive stages, with the determination to an eighth of an inch of the relative position of each column, the screaming of the little engine, the swift upraising of the massive columns and girders, the adjustment of the roof principals, the watchfulness and care which riveted together those monstrous domes, the anxiety of mind and ceaseless toil of nobly labouring men, have ever had our sympathy. The contractors made a bargain they spared neither money, brain, nor muscle, and have completed it. We would ask the wondering thousands who will collect beneath those arched ribs and wide-spreading girders to remember, sometimes thankfully, that little army of working-men, with their selected officers and capable chiefs, who made a shelter for those acres of treasure which enchants them.

We have already mentioned some of the marvels of art which will be shown together in what is called the Mediæval court, but Gothic art has burst the limit of that insufficient boundary. Skidmore, at the head of metal-workers, stands proudly forward in the south-east transept. There, too, is Hart, with a gorgeous display of his well-known articles. Beneath the gallery, Earp the carver, exhibits some of his best workmanship, designed by Mr. Street and Mr. Bentley. Near him is a doorway, most elaborately sculptured by, if we recollect rightly, Mr. Poole—a name, we confess, unfamiliar to us, but evidently not long to remain so. Johnston Brothers show a good collection of metal work, and in the rear of it some of the things sent in competition to the Architectural Museum are displayed. Mr. John Bell's obelisk—without a straight line in it—hardly justifies the rumours which have been circulated about it; and Minton's matchless majolica fountain is at present incomplete, in consequence of the orchestra temporarily occupying a portion of the space allotted to it. In the north-eastern transept the colonies show a splendid collection of different woods, some polished and some in the rough, but the necessity for piling up those ugly rival masts of timber is not so palpable as the beauty of the smaller specimens of the wood. In the nave, besides that of Mr. Bell, there is an obelisk of grey granite from Aberdeen, elaborately incised with Greek ornament and gilt. In the northern courts there are some good specimens of wall decoration by Kershaw and by Hayward of Newgate-street, but we have not space at present to particularise them, or to detail the beauties of the painted cabinets which line the neighbouring enclosure. A high and lengthy casting, of unusual excellence, stands in front of the French department. The court itself is divided into recesses like those in an Eastern bazaar, each being devoted to some special kind of manufacture. We noticed two recesses occupied by articles of building construction, prominent in which were specimens of imitation marble and stone, and beautifully clean castings of finials, &c. The wall decoration is also distinguished by that brilliant and harmonious colour which characterises our neighbours' works. Retracing our steps for a hurried glance at the Architectural drawings in the north-eastern gallery, we find ourselves in the midst of the best works which have within the last few years adorned our several exhibitions. It is a real pleasure to find that our great architects—if they have not sent new drawings—have at least furnished up and forwarded their old ones. Even the President of the Institute contributes a drawing, and Professor Donaldson two or three. Mr. Scott sends the fine drawings of the Foreign-office, with Mr. Thomas Allom's easily recognised touch upon them. In fact, it is curious to notice how many drawings appear here displayed by his dexterous hand. "The Design for a City," by Mr. Kendall, which was

honourably noticed at Paris, is one of these; and it is not too much to say that, to the able artistic treatment it has received, it is indebted for a greater portion of its merit. Another scarcely less able colourist brings out, with his marvellous pencil, the beauties of Messrs. Digby and T. H. Wyatt's military chapel, and is recognised at a glance again in Mr. Ferrey's, Mr. Searle's, and some dozen other drawings, bearing the names of different architects. Would it have been too great a sacrifice to have "rendered unto Caesar the things which are Caesar's," and to have acknowledged, in an exhibition of this kind, the names of the artists who have helped the architects to a proud distinction?

Amongst the most prominent drawings is a design for the restoration of the Tomb of Mausolus. It comes boldly from the hand of Mr. Fergusson, who has, as our readers are aware, criticised somewhat severely Mr. Newton's, or rather Mr. Pullan's restoration; a comparison of this drawing with Mr. Fergusson's other contributions show very plainly that his "assistant," in preparing it, was also worthy of being mentioned, and of having his services publicly acknowledged.

Of designs for the Government offices there are many, as also there are of the Manchester Assize Courts. Professor Kerr shows by his work that his recent appointment was a worthy tribute to the talent of an able man. Mr. Newton has a large drawing, in which we admire alike his skilful delineation and his powerful conception. His drawings for years past have been distinguished by the same large grasp of subject and the like vigorous representation of it. Several designs for the embankment of the Thames caught our eye, but, above all, did that well-known one by Mr. Thomas Allom, which some years since adorned the walls of the Academy. Mr. Arthur Allom lays once more before us his best work,—the design for the interior of a public bath—together with his Royal Academy gold medal drawing. The indefatigable Mr. Hayward shows us a Gothic adornment of the Thames banks, but, clever as it is, it does not reach the grandeur of Mr. Allom's design.

We were glad to find here that the custodians of Sir C. Barry's drawings have given foreigners an opportunity of examining the productions of, perhaps, the greatest of modern architects. He is represented not only by his designs but by his early studies; the same remark applies to the drawings of Mr. Digby Wyatt. Sir Chas. Barry's sons maintain, in a great degree, their father's high renown. The drawing of St. Giles' Schools show Mr. E. M. Barry's most picturesque work, whilst the designs of Banks and Barry remind us of the father's power in Italian design. Mr. White, who has of late been too frequently absent from our architectural exhibitions, appears once more to delight us with his familiar handling of mediæval forms; and Mr. Street, as usual, has his unequalled pen-and-ink sketches set like gems in the coloured works of his brother architects. Our space will not permit us now to do more than record the impressions of a hurried visit to the two galleries; but we can say, without fear of contradiction, that a finer collection of architectural designs and drawings were, perhaps, never before collected together by English architects. Our foremost men seem really to have awakened from their long sleep to own their calling, and to vindicate their reputations. We miss only him—"the bravest of them all"—the old man who, eloquent, with the enthusiasm of youth, can speak of the occupation of his manhood; who, if he has not plentifully embodied his thoughts in brick and stone, has never, by a line or moulding, disfigured a building, but has made the structures that he has reared monuments of his cultivated genius to guide the architectural student in his forward course, and to stimulate his exertions. It is a drawback on the attractive features of the Architectural gallery that it contains nothing from the hand of the accomplished and esteemed Professor Cockerell.

ST. GEORGE'S CHURCH, BENENDEN, KENT.

WE are asked to add to our notice of the works at this church that the restorations have been carried out from the designs of Mr. D. Brandon. The nave piers and arches, and the nave roof, formerly of Classical design, are now replaced by Gothic work of fifteenth century character, in accordance with the style of the architecture of the windows of the aisles and chancel. The chancel is divided from the chancel aisles by clustered columns, and covered with a new boarded roof, formed into panels and decorated with coloured ornament. There is also a new handsome open roof, of the Perpendicular period, over the nave. The east window is filled with stained glass by Mr. Wailes, and below it, and round the communion walls, a reredos has been painted, harmonising with it in colour. Oak benches are provided in the chancel for the choristers. The aisles and chancel are paved with Minton's tiles. The character of the old church has been preserved as much as possible, but on the south side of the church it was found necessary to rebuild three of the bays, the original tracery of the windows having almost entirely disappeared. The external repairs and new work have been executed in local stone, and Bath stone has been used in the interior of the church.

The east window is erected to the memory of the parents of Mr. Gathorne Hardy, at whose cost the whole of the works have been carried out by Messrs. J. and C. Panson.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—On Wednesday last week the third *conversazione* of this Society took place at the Galleries of the Society of British Artists, Suffolk-street, Pall-mall. The rooms were crowded. The music comprised a selection from the works of Mozart. The grand quintet with wind instruments, a composition so rarely heard, was admirably played by Mr. Alfred Gilbert, Messrs. Smith, Pollard, Nobbs, and Standen. The vocalists were Mlle. Gapepa, Madame Gilbert, Miss Susanna Cole, Madame Elwood Andrea, Mr. Gaynor, Mr. Richard Seymour, Signor Ciampi and Herr Fornes. Mr. Alfred Gilbert, in conjunction with M. Benedict, undertakes the musical arrangements of the society.

THE METAL-WORK CHOIR-SCREEN AND CORONA FOR HEREFORD CATHEDRAL.

AMONGST the most interesting, and also the most instructive, works that appear in the Great Exhibition, the place of honour must be assigned to those which, while they are distinguished by merit of the highest order, are strictly typical in their character—true examples of what may be systematically achieved in either art or manufacture for a definite purpose, and neither mere experiments nor exceptional illustrations of clever eccentricity and ingenious caprice.

The metal-work choir-screen for Hereford Cathedral, that stands a little to the south of the eastern dome, is pre-eminently a typical work, and it may claim to be regarded as one of the most valuable exponents of the true condition of the art-manufactures of England. It shows what is now being done in this country in the highest department of metal-work; and it shows this without any direct reference to the Great Exhibition. It was not produced for the Great Exhibition, or with a view to being exhibited there; and it now appears at South Kensington simply because, having been just completed, it might fairly be held to exemplify its own class of productions. This screen was designed and executed for Hereford Cathedral, and in that noble edifice it is eventually to take its proper place. We are particular in directing attention to the circumstances under which this screen was produced, because we consider it to be most important to distinguish, in a Great Exhibition, between those works which have not been, and those which have been, made expressly for the purpose of being exhibited.

At the present time the capabilities of metal-work, or rather our own capabilities for dealing with the hard metals and for executing metal-work, are subjects both of general interest and supreme importance. In 1851 iron architecture as was exemplified by the first Great Exhibition itself, and was a bold step in advance of the time. Now, the mine has in a measure superseded the forest, and it aspires to rival the quarry. We are sedulously arming our ships of war with massive iron; and with iron still more massive we are preparing to render our land fortresses absolutely invulnerable. And, at the same time, notwithstanding the deplorable architectural shortcomings of the present Great Exhibition building, during the last few years an architecture proper, also of iron, has been gradually growing up amongst us, and it continually demonstrates, with fresh success, both the worthiness of its character and the versatility of its resources.

The growth of this iron architecture has very lately received a powerful impulse from the admirable restorations of the two cathedrals of Lichfield and Hereford, that have been effected under the direction of Mr. G. G. Scott, R.A. In each cathedral a new choir-screen formed a part of the design to be provided by the architect of the restorations, and both of these screens have been executed, from Mr. Scott's designs, by Mr. Skidmore, of Coventry, in metal-work, the metals employed being iron, brass, and bronze or copper. The whole is hand-wrought, and the processes employed are, for the most part, those that were introduced and applied with such grand success by the architectural metal-workers of the middle ages. The Lichfield choir-screen was fixed last year beneath the choir-arch of the cathedral, and it is doing its appointed work, and it has won a well-merited reputation. This reputation of the Lichfield screen determined the Dean and Chapter of Hereford to confirm the suggestion of their architect, that their new choir-screen should also be produced in metal-work, and produced by Mr. Skidmore. This second screen, being thus the latest architectural work of importance in metal, was first conceded by the Hereford authorities for a temporary sojourn at the Great Exhibition, before it should be permanently established in their cathedral. Visitors to the Exhibition who may study this fine work will see it to great disadvantage, from the circumstance that, being a true screen, it is not attempting, in the Great Exhibition, to do screen duty. At its two extremities it abuts upon nothing; it does not lead to or from anything; it neither shuts off one part of a building from another nor serves to connect together two different parts of the same building; and it has no association or sympathy whatever either with the edifice in which it stands or with its own multitudinous surroundings. It can well afford, however, to be dealt with and estimated exclusively on its own merits. All that it asks is, that it be regarded as a choir-screen, which is designed to stretch across, and to be covered by, the choir-arch of an English Gothic cathedral.

The composition is carefully adjusted as well to the office to be discharged by the screen in its screen capacity as to the natural qualities and capabilities of metal-work. It consists of an arcade of five great arches, the central arch being surmounted with a lofty pedimental canopy exquisitely crocketed with bunches of flowers and foliage, and each arch of the entire group being divided into two sub-arches. The shafts of the first order are clustered, but the slender shafts of the sub-arches are single. The principal constructive members are of iron, and very many of the minor details and of the decorative accessories are also executed in the same metal. The screen itself, indeed, may be entitled a grand example of iron filigree, so large is the proportion of the iron to the brass and copper, and so exquisitely delicate the treatment of this invaluable metal. The iron is variously painted, the colours having all been obtained from oxides of the metal itself, except the greens, and thus nature herself may be said to have painted this ironwork in the hues which she has provided for man's use through her chemical action upon iron. This colouring is at once consistent and agreeable, and it both harmonises and contrasts well with the burnished brass and the copper, to which important parts of the work have been assigned, and with the vitreous mosaics that sparkle

about the arch heads in such rich profusion. The capitals of all the shafts, the corbels which support the statues, the cornice, and the inner feathering of the central canopy, with various other details, are of copper, which retains its natural rich colour. In the execution of these beautiful members, Mr. Skidmore has put forth his full strength. They are triumphs of metal-architecture of the highest order. Wrought by the hand from the sheet copper, and executed with the point of the chisel after the method of the early metal-workers, these capitals demand especial attention and thoughtful study. They will be found to combine natural forms with architectural conventionalisms, the former retaining all their native grace and beauty, and the others adapting themselves with most felicitous propriety to the conditions of metal-architecture; the passion flower is repeatedly introduced, and it predominates in the composition of the central capital, and of the corbel which rises above it to support the figure of the Saviour, who is represented as in the act of Resurrection. This fine figure stands in front of a large pointed vesica-shaped panel, which is cusped and enriched with elaborate splendour. Above this panel is a circle, and higher still the point of the canopy rises into a cross, distinguished at once by the simple dignity of its form and the richness of its adornment.

On either side of the main central arch, corbelled out from the capitals of the arch shafts, is a group of two figures of winged angels, as in the act of adoration; and, on either side, in similar positions, two other figures of angels playing on instruments of music flank the entire composition. The lateral arches, with their sub-arches, are elaborately cusped with floral work; and the principal arch-heads enclose rich, open, quatrefoil panels. The shafts of these arches are in part brass and in part iron, the iron being overlaid with open-work traceries. The lower portion of the entire screen is grille-work of iron, of extraordinary richness; and, above the spandrels, are filled in with corresponding filigree of iron. Then there is the frieze of brass and mosaic, the cornice of copper conventionalised foliage, and the parapet of brass tile-work of great beauty and most original design. At present there is no cresting that rises above the ridge of the sloping tile-work, and it appears desirable, even should any cresting eventually be added, that it should rise only to a very slight elevation above the ridge.

One remarkable feature in the decoration of this fine work of art remains to be noticed. This is, the free use of a lustrous vitreous mosaic, which has been skilfully associated in broad masses with corresponding surfaces of burnished and jewelled brass. The effect thus obtained is brilliant in the highest degree. This brilliancy, however, it must be borne in mind, will be subdued when the screen is placed in its proper position beneath the choir-arch of Hereford. Then the whole of the colour, whether of these mosaics, of the brass and the copper, or of the painted and partially gilt iron, will be toned down and blended together in a manner that can scarcely be imagined, unless the spectator were to walk from the glare and the incongruities of the Great Exhibition direct to the choir of Westminster, or, better still, were to hasten direct to Lichfield, that there he might contemplate the companion screen in its own becoming place, or were to go to Hereford itself, and on the spot form his ideas of what will be the effect of its screen when it shall have been established in that cathedral.

Grouped with the screen in the Great Exhibition, as eventually they will be in Hereford Cathedral, is a magnificent gas corona, executed entirely in that ironwork which we have already designated filigree. This corona is conical in its general contour, and is composed of three tiers of arches, diverging from the central apex, the whole being filled with elaborate traceries. Seven bold standards for the gas radiate from the shaft, or pipe, which descends and forms the centre of the entire work. These standards rise beyond the extreme circumference of the conical outline, at right angles to the radiating pipes that support them, and thus they impart to the composition a most striking boldness, and convey the idea of strength and energy, through their contrast with the arches, and with the curved and flowing lines and the spirals. Each standard has a triple cluster of jets; and, in addition to these, the lower circle of the corona itself is studded with triple jets. The brilliancy of the gas, when it is lighted, will be greatly enhanced by the numerous pieces of crystalite, which are set in every direction about the jets themselves, and which sparkle so effectively amongst Mr. Skidmore's iron foliage. In the Great Exhibition the corona is suspended a little to the north of the screen—that is, rather nearer to the eastern dome. With these two noble objects there will be associated four standards of corresponding style and workmanship, severally destined to find their homes in the cathedral churches of Hereford, Norwich, Lichfield, and Calcutta.

It has been found impossible to complete the Hereford screen in anticipation of the opening of the Exhibition, notwithstanding the strenuous efforts that have been made, under the personal direction of Mr. Skidmore. When it is stated that the order for the production of this screen was not given until after the commencement of the present year it becomes a subject for astonishment that the work appears as perfect as we see it. By far the greatest and most important piece of metal-work that has been produced in our times, and without a superior amongst the noblest and grandest works of the artists in metal of the middle ages, the Hereford screen worthily succeeds the smaller, though, in no respect less artistic or less truly architectural, screen of Lichfield. These two works have introduced to us a new era in metal-architecture; and, as they themselves stand boldly in the front of the architectural achievements of our day, so they give promise of still greater things to come, when the principle of a new style of architecture shall have been recognised and thoroughly established amongst us.

ALLIANCE OF ARCHITECTURAL SOCIETIES.

ABOUT this time last year a spirited scheme, started by the Northern Architectural Association, was on foot, having for its object an alliance between all the architectural societies of Great Britain. This step had been proposed early in the year, and a sort of congress was finally resolved upon, which was to have taken place in London in last summer, but which, we believe, was never held. In fact, the scheme, so far as its immediate realisation was concerned, "fell through," and has remained in abeyance ever since. There can be little doubt, notwithstanding this apparent failure, that such an alliance would be very useful; and, as the approaching season would afford peculiar facilities for making the arrangements, it appears to us desirable to re-open the question.

It will not be necessary that we should endeavour to account for the non-completion of the alliance last year, nor have we all the materials for doing so before us. It is enough to note that substantial progress was made, since a very satisfactory outline of a scheme was drawn up and circulated. This year the preliminaries will be found ready to hand; and, as a far larger number of provincial architects will visit London in the course of this summer than have occasion to do so in ordinary years, the difficulty about a meeting of deputies will be less than it was in the last, or than it will be in any future year, supposing London to be the place of meeting.

The existence of independent architectural societies is very advantageous to the progress of the art and to those who practise it, and there cannot well be too many of them. The establishment of a means of frequent communication between them will be now the less a benefit, for if the views of an individual society, or a member of such a society, are enlightened and valuable, the more extensive the circulation given to them the more good they will effect. If, on the other hand, a society falls into error on any subject, it is far more likely that such error will be detected when submitted to extensive scrutiny, than when kept within the narrower limits of a single society or association.

The professional press no doubt affords, to an extent hardly, perhaps, sufficiently appreciated, the most extensive opportunities for general interchange of ideas. Few papers of importance are read before the architectural societies of which reports, more or less full, do not find a place in our columns; and few subjects of general interest arise which do not either appear in our correspondence or furnish the themes of our articles; and yet we, partly, perhaps, from this very circumstance, are in a position to know well that many communications, of a nature which either do not or cannot find a place in the columns of a public journal, might with advantage be addressed by various architectural societies to one another. There is a certain confidential feeling most properly existing between the members of any honourable profession, which might give occasion to much confidential intercourse, but as no communication made to or through a public paper can in any sense be called confidential, many statements or inquiries, to which this feeling would give rise were a proper channel opened, are of necessity now withheld altogether.

The ordinary run of papers, such as are usually read before provincial or metropolitan societies, will, it is true, be always suitably dispersed by the press, so far as their merit is enough to secure publicity for them. It would be, however, most desirable to be able to circulate among members of the profession questions upon the numerous points of what is generally called "professional practice," about which uncertainty prevails, or which custom, law, or circumstances have settled differently in different localities; nor would it be less useful to have a means of distributing information about local building materials, trade customs, methods of measurement, and even the prices of labour and materials. The internal polity, so to speak, of the profession—a matter often affecting individual interests to such an extent as to render it a most delicate and confidential subject—is subject to, or is in need of, occasional changes and variations, such as demand the attention of all interested, and require unanimity of action. The subject of competitions alone would suffice to illustrate what we mean; but there are many other subjects which are only less pressing than competition, which demand from architects first calm consideration, and then united action.

Such an alliance ought not to erect itself into a new society. It ought to embrace, if possible, all existing societies, for the purposes of a mutual interchange of information, and printed transactions, and of conference on important subjects; but doing this, it ought to leave the societies individually much as they existed before its formation. The affiliation of all societies to a central head is impossible, and, we believe, fortunately so; that central society could only be the Institute, and in the unalterable constitution of the Institute, the inflexible rigidity of which has so often and so justly been a matter of complaint, there is no provision for any such arrangement. The Institute, moreover, although it includes many country members, does not so thoroughly represent the profession throughout the country as to be in all points an efficient head, even if on abstract grounds a fusion under any—even the most unexceptionable—leadership were desirable or tolerable.

It further appears important that the arrangements should be so carried out as to secure the bodies of architects composing the alliance from the undue preponderance of any one society, or any group of societies. Supposing meetings to be held, at which delegates are to be present, the very fact that the meeting was held in any one locality might render the opinions of that locality predominant, inasmuch as all the local delegates could be easily present, while the distance might render the presence of delegates from the other extremity of the country quite impossible; and it even would seem to be desirable that, in any important matter, delegates should only form a sort of committee to draft resolutions or proposals, which could be

come the resolution, of the alliance, only after having been submitted to the societies themselves, and having received their approval.

Further, the difficulty which will, no doubt, be felt in getting together meetings of delegates, and the delay which must occur in procuring the assent of societies to any measure proposed to them by such a meeting, would seem to point out such a course as one to be reserved only for important matters, while ordinary subjects would be best dealt with by correspondence between the secretaries of the different societies and the circulation of papers.

While embracing the opportunity which an Exhibition year seems to offer for holding a Congress in London, we hope that the societies will take care as to the delegates they send. The scheme, even if it be referred back to the different societies for their adhesion or rejection after it has been provisionally agreed to by delegates, will yet depend for its complexion mainly on the character of the delegates themselves; and it is not, perhaps, going too far to say that the adhesion of some of the most important societies will depend very much upon the personal weight of the individuals by whom the matter is proposed to them, and under whose oversight and care it is likely to be. We write these words without hesitation, because we have no personal knowledge of the gentlemen who have already devoted time and trouble to the subject; their scheme, so far as we have seen it, appears so reasonable, that there can be little doubt of their fitness for conducting the matter to completion, but then they must be adequately supported; all the societies interested ought to take a part in the scheme and each one ought to endeavour to induce its most influential and sagacious members to give their personal assistance, and to bring their influence to bear.

The greatest difficulty in forming a league—be it political, social, or professional—is commonly found when it is attempted to unite large and small, or powerful and weak communities, on one common footing. The larger and more powerful feel that they have at best but little to gain, while they may have more to lose than their neighbours, and they are accordingly disinclined to trouble themselves in the matter. This difficulty may have to be encountered in the proposed alliance, but it must be overcome; of course an alliance of the associations in one district of the country will be so far useful that it will beneficially affect the societies which go to make it up. But to gain a position for the alliance, which shall make it influential throughout England, there ought to be no gaps; and, above all, the adhesion of the influential societies is indispensable. To secure the cordial co-operation of the London societies, and especially of the Institute, may be a matter of difficulty or of time; but the object desired will not be attained unless the Institute, the Association, and even such societies as the Architectural Museum and Exhibition, be included, and so included as to work harmoniously.

Should the Institute stand aside, we do not say that the promoters of the alliance should on that account abandon or postpone their scheme. They should still go on and show the Institute, by the results which they can obtain, how important an instrument has been created, and how desirable it would be for that body to take a share in the movement. Great changes are probably approaching—the voluntary examinations now about to be established—the many prizes now open for students—the possible changes in the Royal Academy—all seem to point to a greatly improved and elevated system of professional education; while in proportion as the profession advances in importance and in social position, its practice ought to become more uniform, and its feelings more and more dignified.

Unity is strength, and if the architects, connected together by a common profession and common interests, can, through the medium of associated societies, act like one man for certain important purposes, they will have a power which, as individuals, or as isolated groups, they fail to possess. The individuals who may be called on to exert themselves, and to give up time and trouble for the promotion of this end, need not consider their exertions as so much thrown away. That which is for the public good is also for the good of the individuals who form that public, and we feel quite sure that neither architects nor architectural societies will have cause to regret any time devoted to the formation of an efficient alliance, or to the working of it after it has been once formed.

COURTS OF JUSTICE.

AT the eleventh general meeting of the Law Amendment Society, held on Monday evening, at 3, Waterloo-place, Pall-mall, the Hon Mr. Headlam, Judge-Advocate, in the chair, Mr. Hastings, in drawing attention to the late vote of the House of Commons on the Bill for the Concentration of the Law courts, said he thought that, taking all things into consideration, and according to the usages of the House, the Bill might be brought forward again this session. This was the time to urge upon the Government to bring forward the measure. The Bill had nothing whatever to do with party politics, as it was brought forward by the society. He then referred to the inconveniences experienced by the profession owing to the present situation of the law courts and their offices, and described the advantages which the measure would confer upon the profession and the public at large. It had been stated that there was no fund to carry out the measure, but he thought the Sutors' Fund could be made available for that purpose. He concluded by moving the following resolution:—"That this society, deeply regretting the recent vote of the House of Commons adverse to the Courts of Justice Bill, reiterates the opinion expressed by the general meeting of the 17th January, 1859, in favour of a concentration of all the law courts and offices in a single building, and urges on the council the duty of renewing their representations to the Government and the Legislature in favour of this great practical improvement in the administration of the law."

The motion was agreed to unanimously.

THE LATE MR. JOHN THOMAS.

THE *Scotsman* says, Mr. John Thomas, the eminent sculptor, died at his residence, Florentine Villa, London, on the 9th April. He was born at Chalford, in Gloucestershire, in 1813, and has died in the forty-ninth year of his age. His extraordinary fertility of invention, wonderful rapidity of execution, and accurate knowledge in every department of decorative and architectural sculpture, caused him to be extensively employed by almost all the leading architects in the kingdom; and his works, whether in wood, metal, stone, or marble, were all characterised by elegance and originality. He was equally at home in every style, and master of every detail, whether Roman, Italian, or Gothic; and his productions are to be found in many of the principal structures in the chief towns of the kingdom.

Mr. Thomas had the honour to be extensively employed by the late Prince Consort, and executed, in a way to elicit the commendation of royalty, large bas-relief panels of Peace and War for Buckingham Palace, as well as similar works for Windsor Castle, Balmoral Castle, and others of the royal palaces. The model dairy at Windsor was designed and executed for Prince Albert by Mr. Thomas. The whole interior is lined with encaustic and Majolica, with characteristic figures, emblems, devices, and mottoes, executed in colour from the designs and models of Mr. Thomas. The enormous lions on the entrance piers at the Britannia Bridge, Menai Straits, each measuring nearly thirty feet in length, were executed by Mr. Thomas; and, even in their gigantic dimensions, display symmetrical proportion and masterly conception. The large bas-reliefs in the station at Euston-square, as well as the pediment and figures in the front elevation of the Great Western Station, are also the production of Mr. Thomas. The sculpture at the new works at the Serpentine, as well as that at the grand entrance gateway to Buckingham Palace, are also by him; and these are but a tithe of the innumerable productions of his extraordinary, industrious, and versatile genius. Public monuments have been erected by him in many of the chief towns in England; and, in addition to this, he was architect of several mansions, among others of which may be named Somerleyton, the seat of his early patron and friend, Sir Morton Peto.

In Glasgow are to be seen a few of the works of Mr. Thomas. The sculptures on the front of the National Bank and in the new telling-room of the Union Bank are specimens of his skill. Another work of his there, the beautiful mausoleum of the Houldsworth family, with its figures of Faith, Hope, and Charity, is a model of purity, both in its sculpture and architecture. The late Mr. John Houldsworth had his new house decorated and furnished by Mr. Thomas. The ceilings and walls of the principal apartments were enriched and coloured from his designs; and mantelpieces and doors of inlaid woods and marbles, floors of marquetry, marble statuettes appropriate to the rooms in which they were placed, tables, chairs, carpets, and curtains, all in unison, from Mr. Thomas's designs, rendered this house altogether a perfect specimen of the unity and harmony so much desiderated in internal furnishing and decoration.

In Edinburgh we have a few specimens of Mr. Thomas's works,—the architectural sculpture on the Life Assurance buildings in Princes'-street, the group of figures in the Masonic Hall, George-street, and the quaint figures on the unique fountain at Holyrood.

While carrying on a very extensive business as an architectural sculptor, Mr. Thomas applied himself to high-class art; and his figures of Musidora, Godiva, and others, exhibited in the Royal Academy, were received with well-merited commendation.

The forthcoming International Exhibition will, we understand, be enriched with several specimens of Mr. Thomas's skill. Messrs. Minton are to exhibit a large Majolica fountain, designed by Mr. Thomas, in the Great Western Transept. It is most elaborate, both in design and execution, and colossal in dimensions. But by far the most interesting production of Mr. Thomas to be exhibited is a model on a large scale of a monument to Shakspeare, the design for which, we believe, was submitted to, and approved by, the Prince Consort. The model is between twenty and thirty feet in height; the figure of Shakspeare, which is eight feet in height, is seated on a circular pedestal, enriched with figures from his works; and on each side, on ante-pedestals, are figures of Tragedy and Comedy. This design has been the dream of the lamented artist for many years, and there is some reason to fear that his strength may have been over-taxed by his anxiety and labour in connection with this model and the many other works he had in hand. The want of a national monument to our great national bard has been long felt, and it will be pleasing if this noble production, freely contributed, should be carried to completion, and erected on a colossal scale on some prominent site.

In private life Mr. Thomas was all that could be desired. He was on the most intimate terms with all the leading artists in London, and he delighted to be able to lend a helping hand to genius and worth. He was an agreeable companion, a kind friend, and a most affectionate husband and father. He leaves a widow, an only daughter, and many friends, to lament his death; while his works will carry his name far into futurity.

NEW RAILWAYS AND PUBLIC COMPANIES.—It appears from a return of the business transacted by the Committees of the Houses of Lords and Commons, that the Lords have passed thirty bills through committee, of which fourteen are for new railways, and sixteen for harbours, docks, water companies, and miscellaneous public purposes. The Commons have passed sixty bills, of which thirty-four are for railways and twenty-six for miscellaneous purposes. Only one railway Bill referred for consideration to the Lords has been thrown out; there have been ten thrown out by the Commons, and the following have been withdrawn:—London and Midland Junction Railway, West Hartlepool Harbour and Dock Extension, South Staffordshire and Central Wales, Dudley and Bridgnorth; London, Edgware, and Bushey; Market Drayton and Newport, Hull and West Riding Junction, Great Northern (No. 2) Bill, Ellesmere, Oswestry, Ruabon, and Shrewsbury Carmarthen and Cardigan (increase of capital and extensions). The only bill that has yet received the Royal assent is the bill of the Great Northern, for taking additional lands at Doncaster. There is a great deal of work yet to be done by the committees of both Houses before the shoal of bills, amounting to about three hundred, is disposed of, although a great number of them will pass through unopposed.

MR. JAMES FERGUSON'S new work on the Modern Styles of Architecture is announced by Mr. Murray.

OXFORD WORKHOUSE COMPETITION.

THREE architects furnished designs for the proposed new workhouse at Oxford, and the drawings having been submitted to Mr. Aickin. That gentleman has reported thereon to the Guardians of the Poor as follows:—

GENTLEMEN,—In pursuance of your request, conveyed to me by your clerk, Mr. Jacob, I have the honour to report upon the three plans submitted to my notice, viz., one with modifications by Mr. Fisher; another, also with alterations, by Mr. Seekham, and a third by Mr. Castle, all architects of Oxford. My first proceeding was to view the site, accompanied by your Vice-Chairmen, Mr. Greenwood and the Rev. E. Fox, and if it be any satisfaction to the Guardians, I think the site exceedingly eligible, and if they prove as happy in the selection of a plan to place upon that site the ratepayers will have no reason to complain. A question was put to me in reference to disposing of a portion of the frontage. This is purely a financial question, as there can be no doubt but that a large plot of ground can be made very useful in finding employment for the able-bodied inmates, and looking at the rapidity with which building operations are carried on in the immediate neighbourhood, an open space of a few acres will prove of considerable value to the City of Oxford, as affording it a necessary lung—and this rapid increase also forbodes the necessity of additional workhouse accommodation at a future time—I would therefore say, retain it.

The task of adjudicating upon a set of plans of any kind is no easy undertaking, but when they are for a workhouse—a building requiring such a variety of accommodation—the necessity for its being easy of supervision by one individual, that the classes should be properly separated, and that light and air should have free circulation, the difficulty becomes greater and the responsibility severe—added to which as I know by long experience what time, trouble, money, and anxiety a competition entails, my sympathies go heartily with those whose designs my duty requires me not to recommend.

I commenced my examination by viewing the original general plans which in all cases placed the infirmary in the rear, the main building next, and the lodge buildings in front, all parallel with and facing the road, with a drive up the centre of the site. In Mr. Seekham's amended plan the main building was reversed, and the entrance building at right angles with a roadway along the existing footway, known as Divinity Walk, and this arrangement has some advantages worthy of consideration.

I next ascertained if they each possessed the stipulated requirements, regardless of their suitability, and generally found them to have complied with the conditions, and then to find the area covered by each plan and its cubical contents, so as to form some idea of their relative costs. The following are the results:—

	Area covered by buildings in feet.	Cubical contents in feet.
Mr. W. Fisher	31,816	930,000
Mr. J. Castle	31,855	920,000
Mr. J. L. Seekham	32,099	860,000

Thus it will be seen that in the area covered and in their cubical contents little difference existed; another point also established being that supporting the gentleman's estimate of £7,000 to be correct, the cost per foot cube would be about 2d. Not having carried out any work in Oxfordshire, I am not prepared to say what can be done, but my experience in several parts of the country widely apart has been, that between 3d. and 4d. per foot is the very lowest sum for which a building of this kind can be executed.

Mr. Castle's Design.—Each set of plans was then examined in detail, when I found that Mr. Castle's design consisted of an entrance building, a main building of two stories, infirmary and detached chapel, distributed in masses for the purpose of effect. The arrangements, however, are such that it would render a proper supervision almost impossible. It will require but a few remarks to make it clear that it would be highly erroneous to adopt such a plan.

The master and matron's rooms are very inconveniently situated. There is only one ward for 55 able men, many of whom may be unruly; the lavatories are placed at the staircase entrances, which would be, in consequence, always wet and dirty; the kitchen department is inconvenient of access; the chapel cannot be reached but through the kitchen court; there is no communication from the able women's day-room to the dining-hall, but through the work-room and the yard.

Although the sleeping wards are 30 feet wide, windows are only placed on one side, and those very small; the room could not fail to be fetid and unhealthy. There are several other fatal defects, and it is a matter of regret that so much valuable time had been taken up in working out so inefficient a plan. The author has, however, succeeded in his endeavour to produce a pleasing and picturesque exterior.

Mr. Seekham's Design.—Mr. Seekham has sent in two designs. One appears to be a modification of the other, and as this latter is a manifest improvement, attention had better be directed to it. There are still several defects. The Master's rooms are too far from his work; the kitchen and sculleries have to be passed before reaching the main corridor, which has to be crossed to take the victuals to the dining-hall; the entrances will consequently smell unpleasantly, and would be difficult to keep clean; the ends of the corridor are blocked up with the refractory cells, which will prevent a thorough current of air passing through it; the sleeping-rooms for the epileptic are on the first floor. I think they would be better on the ground, and although "future extension" is written in large characters, considerable modification would have to be made previous to doing it.

The married rooms are too small, and one room has no window, while in plan No. 1 a false piece of construction is made to light it. The main building is three floors in height, and although not a positive error, yet it is evident that one of two floors could be more efficiently managed.

The Infirmary is also defective. The corridor is badly ventilated, and windows are placed on one side of the wards only, and on the first floor. Fever patients have to pass through one room into another, which is a very objectionable feature. There are other arrangements of a questionable character it would be needless to enumerate.

Mr. Fisher's Design.—Mr. Fisher's design, No. 2, although requiring alteration, is free from many of the objectionable features in the other two. There is much more system and compactness in it. The corridor is fairly lighted and ventilated. The Master's rooms, kitchen, dining-hall, and other offices are well placed, and the main building admits of unlimited future extension. The infirmary also is, by far, the best of the three, and so arranged as to be capable of

being well ventilated. I beg, therefore, to recommend his design for your adoption, with some suggestions which I have indicated in pened on his plan No. 2, and more clearly shown in the accompanying sketch. I propose to remove the octagon centre part, and to square the rooms to give to the Master an office and sitting-room on one side, and add an officer's dining-room on the other side. I have ventured to place the probationary wards in the main building near the entrance—the day and night nurseries to adjoin one of the able women's wards; the boiler-house, stores, brew-house, &c., to be alongside the dining-hall on the male side; the work-room, laundry, drying-room, and washhouse on the female side; and the married couples to occupy the space now allotted to the washhouse and nurseries in a one story building.

The chapel might be placed with advantage in the front, by which a more ready access from the kitchen department and stores to the infirmary might be had; and taking into consideration the fall in the ground, the principal stairs may be placed as shown, as it is probable the dining hall, &c., will be on higher ground.

Infirmary.—The convalescent rooms might be curtailed, and a nurse's day room on one side and a dispensary on the other might with advantage be secured. A communication should be made between the corridor and the eutaneous wards, and with the staircase of the fever wards, for the convenience of the surgeon and nurses.

The lodge department should have a wide entrance; porters' rooms and tramps' ward on one side, a waiting-room for paupers, a staircase and relieving officer's room on the other, and the board-room (which should be approached by two staircases, one for the guardians and one for the paupers), with committee and strong room on the first.

In venturing to make the preceding suggestions I have done so in the hope that they may be considered useful to the Board—as being the fruits of some experience in these matters. I have also gone into the subject of construction, and, having examined the specification, find it to be efficiently drawn up and the scantlings sufficient. I would suggest, however, that either flatter roofs be adopted or that some use be made of the existing space, which is a great waste; a slate course, consisting of two courses of slate breaking joint bedded in cement, should be inserted in all the walls immediately above the ground line to prevent damp rising. The drainage had better be collected into a tank, with, however, an overflow taken to the city sewer. The water from the city had also better be used, as wells and pumping lead to convenience.

GEORGE AICKIN.

With reference to the foregoing report, Mr. Castle writes to the Guardians—
"As a model workhouse—as a workhouse complete in detail and sub-classification—My plan is 'inefficient;' and it is so simply because it is cheap, and because the sum of £7,000, which you propose to expend, is also 'inefficient.' If I may be allowed to express an opinion, I should say the most efficient which has been sent to you is one or other of the three which you excluded from competition at once—for this reason, that all three were prepared upon the supposition that they would be entertained, irrespective of cost.

"The general remarks made by Mr. Aickin indicate very plainly that he made a rapid examination of my plan, and never read my specification. Had he done so, his remarks upon my windows and ventilation could not have been made. Nor would he have considered as vital defects some trifling points which could be rectified in five minutes without adding to the cost of the building. My plan may be good or bad; it is my own, and the cheapest I could design. Mr. Aickin admits that it complies with your instructions. Beyond that I can say nothing. But I must beg that you will place it with the rest of the plans and specifications in some public room where the ratepayers and general public may have an opportunity of seeing what has been submitted to you and what adjudication has been made. Such an ordeal will hurt no one. I know that my errors will reach me sooner or later, and a professional castigation, if it is just, may do me infinite service. So with the rest of the competitors.

Allow me to remark that at the present stage of your proceedings such an exhibition as I have suggested would be satisfactory to the competitors—for most of whom I can speak—and the general public anticipates that such a course will be adopted."

NEW WAREHOUSE, HARTLEPOOL.

A NEW warehouse is nearly completed, for the West Hartlepool Harbour and Railway Company. The building is 365 feet long, and 100 feet broad. The foundations are excavated 8 feet below the level of dock coping; the piles, nearly 900, are 20 feet long, driven 6 feet below the dock coping. Concrete, 3 feet deep, is laid in the trench; cross and longitudinal sleepers, 12 feet by 6 feet, are secured to the top of the piles; and, imbedded in the concrete on this foundation, Yorkshire landings are laid, 3 feet 6 inches broad, and 5 inches thick. On this the brickwork commences; after it has been brought to level of dock coping there is a base of ashlar stone on the outside, in four courses, making 5 feet in height, and from this commences a fire-brick facing to the full height of the building, which is about 64 feet, being five stories high. It is divided into three compartments by cross walls, except the top room, which is open throughout. The columns on the ground floor are of Dantzic oak, all above are of Memel fir; the beams and joists are all Memel fir; on the top of each pillar is a cast-iron saddle, so constructed that no weight is taken by the wood beams. The roof, all timber, is in one span. There are nine large openings on each side, 24 feet clear, with semicircular arches of ashlar stone, which, as well as the base courses, is "rock faced," and clean dressed in the openings. There is a stone and brick corbelled parapet all round the building, and eight pilasters, one at each angle and two on each side, having clean dressed ashlar caps; the two gables have stone and brick corbels and stone water tabling. A large semicircular window is placed in each gable.

The work was commenced in March last. Mr. Bastow is the builder.

NEW DRINKING FOUNTAIN AT CAMBERWELL-GREEN.—A new drinking fountain has been erected at Camberwell-green. It is the gift of Miss Caroline Edwards and the Metropolitan Free Drinking Fountain Association, and has been erected under the superintendence of that society. It is supported by four columns of serpentine marble, resting on a square solid pedestal. Under a dome four jets of water spring from the centre. The design is by Mr. Rolles, the surveyor to the association. This makes the eighty-sixth fountain which the association, with the well-known philanthropist Mr. Samuel Gurney at their head, has opened in London, and by the 1st July it will open eighteen more.

ARCHITECTURE OF PALESTINE, FROM THE EARLIEST TIMES TO THE CRUSADES.*

Permit me to offer you my heartfelt thanks for the favour you confer upon me in allowing me to present myself before you to address your honourable society. This is not the first instance of courteous hospitality which I have received since I have been in England, though it is the first time that I have undertaken to treat of my present subject—the Architecture of Palestine, from the earliest ages to the Crusades. I have made many investigations and gone very fully into the study, and I have great pleasure in imparting the information which I possess, and which I hope to communicate more fully in my forthcoming work, entitled “Jerusalem Explored.”

The limited time allotted for this lecture compels me to restrict my observations within the briefest space possible; hence I plead guilty, in anticipation, to the charge, which I fear may be brought against me, of dryness and want of minuteness of details in my descriptions. I wish it to be understood, however, that I shall be glad to offer any information or explanation to those who will apply to me, and that I shall gratefully accept any criticisms or observations which may be made to me. It now only remains for me to solicit your indulgent attention while I address you.

M. le Comte de Vogüé, of Paris, thus writes, in the introduction to his work upon the churches of the Holy Land:—“Passing by the ancient monuments, with which I was sufficiently well acquainted, through my first visit to Jerusalem, of twenty-four days’ duration, and with regard to which but little remains to be said, I have occupied myself in the search after monuments of the middle ages.” This is more than I can say, after a residence of eight years in Palestine, and more particularly in Jerusalem. I am compelled to own that much still remains for investigation and study in the monuments of antiquity, while those of the middle ages are well known, greatly owing, it must be confessed, to the labours of M. de Vogüé, who has rendered true service to science, although he has fallen into the error of ascribing all church architecture to the period of the Crusades. I shall reply to this in due time, and will now proceed to speak of the Jewish works, both before Solomon and during his reign, and that of Herod. Thence, I shall come to Constantine, Justinian, and the Saracens, in order to reach the period of the Crusades.

BEFORE THE REIGN OF SOLOMON.

The condition of the country of Canaan previous to the conquest of Joshua was not that of barbarism. It was certainly, to some extent, in a state of civilisation. Arts, trade, industry, and commerce were already considerably developed. We are not left ignorant that the country possessed “great and goodly cities, and houses full of all good things” (Deut. vi. 10, 11). But how are we to investigate the remains of its edifices? how ascertain their style of architecture? Certainly it is a study not unattended with difficulty. When the chosen people entered the promised land, they had come from Egypt, where art, trade, and luxury flourished. In the wilderness Moses found artists of sufficient ability to construct the tabernacle. It may, therefore, be inferred that they introduced their knowledge into Palestine; but where are the monuments in proof? We read that David and Solomon were obliged to apply to Hiram, King of Tyre, for artists and labourers to execute their magnificent works. It must be confessed that the want of monuments of this first epoch renders all research into the architecture of ancient Judea exceedingly difficult. The people whose name it bears have not even transmitted to us any historical notices on that subject.

I believe that, during the frequent excursions which I made into the country, I came across the remains of walls and arches of that date. The localities in which I discovered them, and their construction, I shall place before you, both by means of verbal description and by drawings.

Ephrath.—In the year 1729 before Christ, “Rachel was buried in the way to Ephrath” (Gen. xxxv. 19). Six hundred and thirty-four years afterwards Samuel said to Saul, “When thou art departed from me to-day, then thou shalt find two men by Rachel’s sepulchre in the border of Benjamin at Zelzah” (1 Sam. x. 2). Upon the road leading from Jerusalem to Bethlehem the monument of Jacob’s wife is still to be seen. To the east of this monument, at a distance of 400 feet, a very ancient wall is found. This I believe to have been that of Zelzah. The wall appears to be of Pelasgian construction. It is composed of large blocks of stone, measuring from 3 to 8 cubic feet each. The stones are of the greatest solidity at the base, and diminish in proportion as the vertical rows rise in height. These stones are formed into broad, flat polygons, and united together without cement, but with some degree of precision by means of small stones, employed to fill up the interstices resulting from their irregular conformation. The thickness of the walls at the foundation is 6 feet, above ground 5 feet; its present length extends to about 208 feet. Above the foundation are five rows of stone of unequal height, averaging from 8 to 9 feet. This relic of the past has been much mutilated by Arab vandalism, and portions of it used for the formation of fences.

That a city must formerly have existed on this spot is proved by vestiges of other walls, by an aqueduct excavated in the rock, and covered with large flat polygonal flags; by the fact that the surrounding soil abounds with hewn stones, with cisterns dug out of the rock, and with ruinous sepulchres, which serve as places of shelter for shepherds and their flocks. This wall, of which no author has made particular mention, has some resemblance to the walls of Mantineæ, which I visited in Greece in 1831. I have met with no other similar construction in any other part of Palestine.

Deir el Benat.—To the south of Bethlehem, and within an hour’s distance, lies the valley of Deir el Benat, which joins that of Etlam above the Arab village, now called Urtas. Upon ascending this valley for about a quarter of an hour, the traveller sees some ancient ruins, which I take to be those of Bath-Rabbim, of the Song of Solomon (vii. 4). An irregularly shaped space of ground, measuring 52,000 square feet, is surrounded by a wall 5 feet in thickness, and of unequal height, varying from 12 to 24 feet; on the east it runs up to the mountain; to the west it faces the torrent. On the latter side is a gate, 8 feet wide and 16 high, with jambs formed of several stones, supporting a round-headed arch, without the aid of a key-stone, which arch is composed, like the side posts, of stones worked in rustication. The entire wall is built of masses of rock, roughly squared, in combination with others of polygonal shape, but all more or less showing traces of rustication. The size of the stones in general is from two to four cubic feet. The spaces left in the wall are filled up with small stones, and

the cement, which is not observable in the exterior, is plainly perceptible in some parts of the interior of the wall. An examination of the cement convinced me that it was applied subsequently to the original construction. Within the space surrounded by this wall I discovered the rock hewn in such a manner as to form different apartments, but no internal construction remains. I, however, collected a number of small cubes of stone, which may be found in a small portion of the ground; they measure three or four lines each in surface, and form a mosaic, though without design. The gate is enclosed by a strong Arab wall. I endeavoured to get it opened, but the Arabs, who foolishly pretend to call themselves the owners of the place, forbade my entrance. Nevertheless, I succeeded, without the aid of bakshesh, in forming an aperture sufficiently large to enable me to see that the gate opened into a vast court, roughly hewn out of the rock, and that from it were two openings leading into other chambers. The walls bear the impress of the ages which they have seen pass away, but they are still firmly rooted in their original spot. The same class of wall is found at Lower Beth-Horon. As Solomon erected buildings in that locality, it might be thought by some that these were of his construction; but this is not the case. Such do exist, so that it is easy to compare them and observe that the one are much more ancient than the other.

The Sepulchral Valley of the Jews at Jerusalem.—In close proximity with the sepulchres of the Jews, on the north, lies a valley, which must be traversed to reach Neby Samuil, the ancient Ramah, the dwelling-place of the prophet Samuel. A short distance from the valley eastward are found portions of a wall composed of large rectangular stones roughly put together, without cement, mortise or iron. Among them exists a doorway 6 feet wide and 12 feet high, the side posts of which are each composed of a single stone, and support a monolith architrave 3 feet high, resting upon them without cement. It bears a resemblance, on a very small scale, to the door of the Treasury of Atreus, at Mycenæ. Of such constructions no trace is found after the period of Solomon. Throughout the whole of Palestine, nothing is to be seen so ancient as those I just described, and which I believe to be anterior to Solomon.

The works transmitted to us by the Patriarchs are necropolises, hewn out of the rock to serve for receptacles for the dead, as at Hebron; monuments erected over graves, like those of Rachel at Ephrath and Joseph at Sichem, formed of simple stones and without inscription; mausoleums, like that of Absalom at Jerusalem, the level surfaces used as threshing-floors, as at Ramah and Gibeah; and, finally, the vast reservoirs as on the way to Hebron. To all these works, perseverance and strength to overcome the resistance of the stone are plainly apparent, but the taste and genius of art are totally wanting.

Sepulchre of Samuel in Ramah.—It will not be out of place here to describe the construction of the sepulchre of Samuel in Ramah, which I have minutely examined. In ancient Ramah, now a village, called in Arabic Neby Samuil, exists a mosque which was formerly a church built by the Crusaders. The walls of this building are far from corresponding with the magnificence of its foundations, formed of enormous blocks of stone, which, though defaced, still show traces of careful and elaborate rustication. On the south-west side of this building stands another of the same period. This contains, or rather covers, the rock in which is the prophet’s sepulchre. By a door formed of iron grating, opened for me by the Dervish in charge, I entered a chamber cut in the rock; in the centre of this chamber is an enormous sarcophagus, which I recognise at a glance as a specimen of Moslem architecture, and which is the same that is exhibited with so much pretension and mystery through a hole, traversing the entire thickness of the rock, to persons not permitted to set foot upon the rock overlying the tomb of the prophet, but who are obliged to be content with remaining in the upper room, where there is another sarcophagus of wood. This sight did not, however, suffice for me. Upon examining the court, I perceived an opening, 10 inches in diameter, running through the rock and communicating with a lower chamber, which was utterly dark. Besides that, I saw a passage railed off with iron bars, and inferred, from the rusty state of the gate, that the Dervish himself never ventured to visit the old prophet, whom the Mussulmans declare to be still alive. All my endeavours to induce my guide to open this gate were fruitless. Though he persisted in seeking to compel me to retire, I accomplished my investigations as well as I could without him. By means of lighted paper thrown down the hole to which I have alluded, I discovered the existence, in the centre of the cavern, of a sarcophagus of whitish stone, of rectangular form at its base, surmounted by a triangular prism, without ornament or inscription. The walls of the sepulchral chamber were smooth, like those of the one in which I was. The smoothness retained the appearance of having been produced by a machine furnished with iron points, and which acted with a rotatory motion. I made the same observation from the horizontal grating, and perceived that the steps were cut in the rock itself. It is under the sarcophagus that the tomb, cut vertically in the rock, must be sought. In my examination I was favoured by fortune, or rather by the humidity of the place itself. Had it not been for this, the lighted paper which I employed would have ignited the petitions addressed to the prophet, and I should have been subjected to the wrath, not only of the custodians, but of the whole village.

FROM THE PERIOD OF SOLOMON TO HEROD.

During the times of David and Solomon, luxury increased among the Jews. The arts and industry greatly improved under the influence of Phœnician artists and craftsmen, who came to Judea in large numbers, and afforded the Hebrews the opportunity of learning their arts. Of the works accomplished by David, we have no indications or trace remaining. No doubt can be entertained that he furnished the means and planned the localities, and that his ideas were carried into execution by Solomon. The latter was not occupied, like the former, in fighting against the enemies and founding new institutions, and, therefore, was at liberty to devote his wisdom and energy to the augmentation of the splendour of his kingdom, by the erection of stupendous buildings, by commercial enterprise, and by the encouragement of luxury little in keeping with the constitution of the country. But of all his great works, what remains have we? The Scriptures inform us Nebuchadnezzar converted them into a heap of ruins by fire, employed men to raze the walls and fortifications, and carried the people into captivity. In the reign of Cyrus, 52 years afterwards; and 536 years before Jesus Christ, the exiles returned to their native land, rebuilt Jerusalem and the temple of the Lord, which did not equal the first in splendour, in consequence of which Herod substituted for it one far grander. The whole of the long period which elapsed between Solomon and Herod is utterly unproductive of monumental remains. We have certainly not a building, perhaps not even a capital, of the time. Of the latter, however, I speak doubtfully. The capital of the monolith found under the mosque of Akse is at present the subject of serious study and investigation, with a view

* Paper by Signior PIROTTI, Architect to the Pasha of Jerusalem, read before the Royal Institute of British Architects by the Rev. GEORGE WILLIAMS, April 28th.

to assigning it to the Solomonic or Herodian epoch. In Jerusalem and Palestine in general we have only blocks of worked stones, walls, reservoirs, and aqueducts of the period in question to discuss; and of these I will now proceed to speak.

The existing walls of Jerusalem, especially on the east, mark the various epochs at which they were built. At their base I recognise the work of Solomon's period; higher up, some portions of the walls as rebuilt after the captivity. Other parts show the refined workmanship of the Herodian age, while Roman and Saracenic work is not rare. The character of the Solomonic walls, as alluded to by Flavius Josephus (Book XV., chap. xxxi., 3) I recognised, on examining, the stones forming the foundation of the actual walls of Jerusalem. On the east, on which side I made deep excavations, in order to satisfy myself of the fact, the large stones composing the foundations vary in length, and are squared with some degree of exactitude. They have a smooth edge round the rustication about 2½ inches wide. The rustication itself projects about 3 inches. The stones are joined together by means of mortises cut in the stones, or by cubical clamps of lead and iron, but no sort of cement is apparent. Above the foundation, stones are seen in relief; hence those portions of the wall in which the courses of vertical and horizontal stones are uniform and well joined I call Solomonic, but where the construction is irregular, and the external surface of the stones shows the mortises for the tenons or for the clamp, I assign them to the epoch subsequent to the captivity. At that period the walls were rebuilt in the greatest haste, to resist the attacks of an enemy who might appear at any moment, as we find from the Book of Nehemiah; hence the inequality in their construction, and the laying of the stones face downwards.

The rustication, then, I attribute to Solomon, who undoubtedly employed it in a rough state in the foundations, as is clearly apparent, and also in the building of the towers, and more finely executed in the construction of the rest of the wall of the enclosure. The reason why so few remains of external walls of Solomon's time are to be seen, may be found in the devastations of fire, vandalism, successive repairs, and the new construction given to the stones during the period of Herod and Justinian. This I shall presently point out, and show that Herod himself employed rustication in some parts of his fortifications.

Speaking of the working of the stones of which the temple was built, Josephus remarks that they were polished and joined together in such a way that it was impossible to discover the joints. Of this no vestige remains in Jerusalem; time, fire and man have never spared the Eternal city, and we are compelled to turn elsewhere for other relics which evidence science and genius.

Solomon's Reservoirs in Etham.—To the south of Bethlehem, and at an hour's distance from it, upon the west side of the road which leads to Hebron, stands a ruined mediæval castle. This ruin looks as if it stood sentinel over three large reservoirs, which are not only, without doubt, the grandest work existing in Palestine, but are also, indubitably, of high antiquity, and may safely be assigned to the Solomonic era, in accordance with tradition. It is remarkable that neither the Bible nor Josephus directly describe them. The latter, however, in his Antiquities (Book VIII. c. vii. 3) mentions a city called Etham, where was erected the summer palace of Solomon, of which the Rabbis give so glowing a description. It is, probably, this palace which is referred to in Ecclesiastes ii. 4, 5, 6. Of the magnificent grounds, nothing remains but some land under excellent cultivation by Mr. Meshulam. This spot, which is situated to the east of the reservoirs, and in the northern continuation of the valley, retains the name of the Enclosed Garden (Can. iv. 12), in honour of Solomon. At various times, among others in May 1861, Meshulam, in digging the ground for cultivation, has met with the remains of ancient walls, reservoirs, and aqueducts cut in the rock.

The three great basins are situated in the Valley of Etham, which runs down from west to east with a very steep slope. They are fed by the rain water that flows down from the two sides of the mountain, and from a fountain situated to the west of the castle, in a direct line to its northern side, at a distance of about 450 feet. I state this because the entrance to the fountain, which is circular in form, is hidden by stones and difficult to find. Solomon probably alludes to this very fountain in his Song (iv. 12), and it is still called the Sealed Fountain. All the three reservoirs are cut out of the solid rock. In some parts they still retain a cement so hard that twenty-nine centuries have been unable to exercise any destructive force upon it. It seems perfectly clear that the primary object of the construction of these reservoirs was the supply of Jerusalem with water, as Mount Moriah is at the present time supplied, in consequence of restorations directed by myself. It is a subject of great regret that the repairs which have several times been executed are never suffered to continue long undisturbed, because the shepherds, fellahs—or peasants—and Bedouins, continually destroy portions of the conduit in order to procure the water for their own private wants, and it is difficult in an Arab country to maintain a proper watch over a circuitous line of about 15,000 yards. However solemnly the guardians may promise to fulfil the duties which they undertake, they are easily induced to slumber under the influence of the god Baksheesh.

The first reservoir to the west is 393 feet long, its average breadth is 225 feet, and its average depth 30 feet. The second, distant about 158 feet from the first, is 432 feet long, its width 225 feet, and average depth 42 feet. At a distance from this of 186 feet in the last, 477 feet long, 213 feet in average width, and in average depth 58 feet. All three unitedly occupy a square superficies of 179,541 feet, and 12,089,450 cubic feet of the rock from which they are formed. What conqueror or ruler of Palestine could execute so stupendous a work? It must be allowed that the glory of having effected it is due alone to Solomon's genius. But it is not only in the construction of these water receptacles that hydraulic knowledge and science are apparent: more especially are they displayed in the vast ramifications of the conduits which convey the water from great distances and various quarters; in the formation of various water-towers; in the contrivance for filtration; in the manner in which the water is introduced, without the least waste; and, finally, in the mode of its conveyance through the conduits to Jerusalem. I am sorry to be prevented, by the pressure of time, from entering into all these details, but I must not pass over the principal without more special mention. The others may be learned from a paper which it is my intention to print before long.

Let us return to the Sealed Fountain. Enter it by the opening, and descend a sufficiently inconvenient passage for about 14 feet. At the extremity we come to a rectangular chamber, 18 feet long, 10 feet wide, and 20 feet high, whose lateral walls are formed of large Solomonic stones. At the base they are rusticated, and on the upper surface smooth. The vault is a round arch, constructed of large stones laid in horizontal courses, nor does the keystone show. No cement is used in the construction. In the middle of the western wall is another

aperture, which leads to a small cavern, where a stream issues out of the rock. At the western corners are two other openings, in which springs are seen dripping from the rock. These three fountains deliver themselves into the rectangular chamber, in the middle of which is a reservoir to receive them. In this basin they are filtered previously to passing into the large conduit, which commences at the eastern wall. The conduit is cut in the rock for a great distance, but the upper part, as it approaches the old castle, is covered with large flat slabs. It is 3 feet wide and 4½ feet high. The waters of this conduit fall a distance of 20 feet at the north-west corner of the upper reservoir, where they are caught in a basin. From thence one part of the water is turned into the first pool, while another portion is conveyed by the aqueduct—which runs parallel with the reservoirs—to the point at which the waters of the reservoirs enter the water-tower, whence they proceed, by the conduit, to Jerusalem.

When the reservoirs are so full that they can receive no more water, to avoid waste the water is received in the basin near the castle, where there is a third aperture leading into a subterranean chamber. Here it unites with the other water, forms a new stream, and all flows together through a subterranean conduit dug in the rock to supply the water tower, from whence the conduit for Jerusalem runs. From the same point proceeds another conduit, which passes southward, at a distance of 600 feet from the third reservoir. This, in case of great abundance of water, could be directed into the valley for irrigation. The whole system of aqueducts has ceased to be of use, because the streams are not abundant; indeed, alone they would be quite inadequate to feed such vast receptacles. During the eight years of my stay it was only once—in 1860—that I saw the three reservoirs full. At other times, it is the second only that has water, and not always that. The whole length of the conduit running to Jerusalem is covered with large stones. In some parts it is constructed of masonry, in others, formed in the rock, and in a few small portions it consists of terra cotta tubes, of which I believe it to have been entirely formed originally. I must beg to be excused, on the ground of want of time, if I enter into no further details in connection with this interesting topic.

Mosque of Abraham at Hebron.—In Hebron, as every one is aware, is the cave of Maephelah, purchased by Abraham, and appropriated by him as a sepulchre for himself and his descendants. This cave is surrounded by a wall of the highest antiquity; but the precise date of its origin has not been stated by any writer. I have no hesitation in following the Arab chroniclers of the sixth and seventh centuries, as well as the tradition of the country, and declaring it to be of the Solomonic, and not of the Herodian, age. At the time of Josephus ("Wars of the Jews," Book IV., chap. ix. 11), the monuments of the patriarchs, in beautiful marble and of elegant construction, were still seen. Now, had they been erected by Herod, the historian would not have omitted to describe them when he speaks of other important works executed by the same sovereign, since he wrote not very long after the period, and was ever ready to magnify the monumental works of the Hebrews. We may reasonably infer that he does not describe it as Solomon's, because the fact was perfectly well known in his time; as Eusebius and Jerome, for the same reason, are silent about it when they name Abraham's sepulchre. Some have fancifully attributed it to Saint Helen; but it would appear that they have overlooked the assertion of Pelgrim of Bordeaux, who visited Hebron in 333, and describes this surrounding wall as constructed of stones of enormous size. Antoninus the Martyr, in the sixth century, makes like mention of it, but does not say that it was the work of the Byzantine Empire.

The north and south sides of the wall are 198 feet long, their width, from east to west, is 112 feet. The height of the ancient work is 48 feet. The walls are ornamented with pilasters of the uniform width of 4 feet, except at the corners, where it is double. All project 8 inches from the plain surface of the work. They are not ornamented with capitals, but support a cornice in high relief, composed of two fillets and a cyma reversa, and were evidently added, subsequently to the formation of the wall, for the express purpose of separating the old and the new. The latter, of Arab construction, it is easy to see was built only to conceal the enclosure from view. The whole wall is formed of regular courses of enormous stones perfectly squared and rusticated, five lines in projection relief, and which diminish in size in proportion to their elevation; each row receding five lines from the row immediately below. There are masses, and not a few, which measure 10 feet in length and 5 feet in height. This external form is maintained in the interior, but without the buttresses. The thickness of the walls is 7½ feet at the base, and 6½ feet above. As far as I had the opportunity of examining, two stones appear, in general, to form the thickness; while in some cases, a single one occupies the whole thickness. No cement is used in uniting the stones. The little which is apparent on the exterior has been placed there by the Arabs, as they themselves say, to prevent the rain from penetrating to the interior. Should any one offer objections to my opinion, I shall be greatly obliged, and shall avail myself of them on my return to Hebron to renew my researches and studies.*

KNAPP'S PATENT PAVEMENT. POULTRY.—As an experiment the roadway in the Poultry is being laid with Knapp's patent pavement, which consists of hollow iron blocks, divided into small compartments, filled up with concrete level with the surface. Four of these blocks will make a square yard. On each side of the road, close to the edge of the footway, are being laid hollow cast-iron tram-plates, six feet in length and 18 inches broad, which are first filled with concrete, and then turned over, leaving the indented iron face upwards, thus forming solid tramways. To keep the paving level at each end iron girders 18 feet 9 inches in length will cross the roadway. Each of the blocks are cast in the same mould so that the whole of them, it is said, will lock into each other, and form a solid mass of iron and concrete of great strength and durability. The work commences at the corner of Charlotte-row, Mansion-house, and extends about 100 yards westward from that point.

PARIS BRIDGES.—The old suspension-bridge of Louis-Philippe, Paris, is closed, and the new bridge, of the same name, which joins the islands of La Cité and of Saint-Louis, and which has been rebuilt in iron, has been opened to the public. The new stone bridge which joins the same isle, Saint-Louis, to the left bank of the river, has also been opened, although the parapets are not yet built. During the twelve years that the Emperor has occupied the throne, this is the twelfth bridge that has been either built or rebuilt in Paris—namely, the Napoleon at Berey, the Ansterlitz, Louis-Philippe, Arcole, Double, Notre-Dame, Petit-Pont, an Change, Saint-Michel, des Invalides, Alma, and Solferino.

ON LEAD WORK.*

THE subject of the paper for this evening first suggested itself as in proper sequence to the valuable contributions on stonework, joiners' work, and metal work, that have been given during the course of the session; for although lead work comes of course under the general title of Mr. Skidmore's paper, I had erroneously, as it appeared, imagined that he would have confined himself to the treatment of iron, the metal by which he has achieved a lasting reputation, and initiated us into the mysteries of the forge and the vice.

Those of us who were fortunate enough to be present at the delivery of his lecture will understand how much that was then propounded applied to all metal ornament, and especially to gold as worked according to his theory, and in an equal or greater degree to lead, as illustrated by his experiments. I think we shall do well to take up the study of lead work first, and when we have well understood the legitimate treatment of the one, we shall be better prepared to design in other and more precious materials. And, first, because we must inquire a little into the history of this much abused material, and trace it from its birth through the various processes of manufacture by which it is moulded to the wants and wishes of mankind. I have nothing new to tell you on this subject, but I dare say you will bear with me for a few minutes while I revive your recollections before we pass on from its history to its application. You will remember that lead exists only in one ore, called the sulphuret, which occurs in veins of varying thicknesses in the primary or transition districts, but most abundantly in the mountain limestone between St. Abb's Head and the Irish Sea. It is also found plentifully in Derbyshire, Shropshire, Devonshire, Cornwall, the Isle of Man, Denbighshire, Flintshire, and some parts of Ireland. The oldest mines are in Derbyshire, and the richest are those in North Wales, which yield fully one-fourth of all the lead in the kingdom. The average annual produce is about 50,000 tons, worth about £1,000,000, at the rate of £20 per ton.

To extract the lead from the ore, the sulphur is driven off as acids, and the metal is oxidized by the action of a powerful heat; a part of the sulphuric acid combines with the metal and forms sulphate of lead, to reduce which quicklime and coal are added during the process, the lime combining with the sulphuric acid, and the carbon of the coal abstracting the oxygen of the metallic oxide. The metal being reduced is collected in vessels, from which it is cast into large ingots termed pigs, and is ready for commerce.

At this stage, lead may be either rolled, or, as it is more generally termed, milled, or cast, or drawn. If rolled, a pig is passed through the rollers some 200 or 300 times, during which process a length of 6 or 7 feet will be increased to 400 by a breadth of 7 feet. If cast, it is run on to a table, and levelled off with a strike. It is difficult to insure a good casting if the lead is required to be under 6 lbs. to the foot, as pin-holes are apt to occur, which, hardly perceptible to the eye, may cause great damage if subject to the filtration of water; the only possible advantage in cast lead being that the purity of the metal is thereby insured. In their castings a linen cloth is stretched on an appropriate table over a woollen one, and levelled off with a strike, as before. In gauging the thickness of sheet lead, it may be useful to remember that 5 lb. lead is $\frac{1}{12}$ inch thick, and 10 lb. lead $\frac{1}{6}$ ditto, and 60 lb. lead is 1 inch thick; but the intermediate variations are too slight to be determined, except by the weight. Pipes are either drawn in lengths of 20 or 30 feet, or the melted lead is forced through a hydrostatic pipe press, and drawn out in an endless coil.

The use of sheet lead in buildings is of very early date. I suppose its application to roofs in Norman work was universal. The lead used was thicker than we consider needful, running sometimes as high as 12 lbs. to the foot. The lead taken down from the church at Braunston, in Northover, weighed 13 lbs. to the foot. The sheets were about 2 feet between the rolls, and the joints were formed by "seams," that is, the overlapping of the edges of the lead without the use of a roll; this practice continued to a late date, and may be seen in houses and churches of the last century. I met with a curious application of this method of jointing lead work in an account of some excavations that took place in the city. A pipe, made of sheet lead, found doubled round, was discovered at a considerable depth, about 3 inches in the clear diameter, the end joints butted together, and a solid casting enveloped them; the top joint was formed with a seam, in the method which I have described. I cannot form any estimate of the date.

Rolls offer greater security to the extreme edges of the lead, and, as they are particularly unpleasant things to tread upon, do not get so much knocked about with the feet. If the slope of the roof is great, the sheets are secured to the rolls with lead-headed nails, and the head covered with a soldered clot to prevent the wet entering. The size of a sheet of lead is 6 feet wide by about 16 feet long; this is cut in half longitudinally, and in lengths suited to the roof, $4\frac{1}{2}$ inches being allowed on each side for the lap over the roll.

We now come to the ridge, and here lead becomes of the greatest value; in fact, it seems the most natural form for sheet lead to assume, clinging, as it were, by its own weight to either side of the roof, and only waiting for the hand of man to give it an artistic finish. How shall we set about it? We have a series of rafters halved together or butting against a ridge, and boarded at the back; upright irons, split and forked to the proper angle, were secured to each pair of rafters of the required length; over this was slipped the lead ridge, the holes being previously made for the uprights, and the cresting, cast in two halves, was then applied and soldered together.

The example given is from De la Quernie's work in the British Museum, and is a beautiful illustration of what may be done in this way. Observe, too, the satisfactory effect produced by the serrated edge. Let us analyse this a little, and see why the eye allows this line to be right. Partly, I think, because the lead is economically distributed for effect; that is, it shows as many lines and as much surface as possible consistent with the work it performs. Partly, I think, because it suggests, if it does not really assist (as Garbett asserts), the downward flow of the rain water; and partly, because the continuous unsecured edges of a sheet are peculiarly liable to be caught and displaced by the wind; and, lastly, because it softened off the longitudinal lines of the cresting, and with its gentle undulation arrests the eye just where it is wanted.

In discontinuous ridges, that is, where the kingpost is carried up and treated ornamentally, a bar of iron traverses the whole length of the ridge, and is covered with lead; this forms a stay bar to the cresting, and is itself sometimes

erected. In slate roofs strips of lead were soldered on to the lower edge of the lead ridge, where the edge was left plain, and, passing under the slates, secured the ridge from accidental disturbance. You will find two examples given in Mr. Burges' account of lead work, the only one published that enters at all into the details of this branch of metal work as practised in the mediæval times, and to which I am indebted for a considerable portion of my information. In De la Quernie's work will be found an account of a beautiful lead cresting at the Hôtel de Ville de Paris, and the Cathedral of Chalons-sur-Marne.

The Palais de Justice, at Rouen, still retains its cresting, though partly mutilated in 1794. Rheims, S. Vulfran, Abbeville, Amiens, Noyon Cathedral, and above all Cologne, are, according to his account, remarkable for their lead cresting. The cresting of the choir at Rouen Cathedral terminated in an equestrian statue of S. George, which was pulled down in the 2nd year of the Republic, for the purpose of making shot—the lead itself was totally destroyed by fire in 1822. Some crests of a late date imitate balconies. The example shown is taken from De la Quernie, and shows us at least how variety of outline may be obtained—a feature most desirable in this prosaic metropolis, where something like this, with a few varieties of chimney-pots, seems the utmost ambition of the builder—I must not say architect; and this balcony outline leads me to say a few words on ironwork as usually designed. I speak for myself, when I say that no ironwork looks as satisfactory in execution as it does on the drawing; it always has more or less of a starved look, and the design generally seems impoverished; nothing is so bad a background for ironwork as the sky. I was noticing this only the other day, when I passed through Bedfordbury, and looked at the iron cresting on the new schools there. I could not but help wishing that our talented president had worked out something original in lead. I can the more freely criticise this building as it has been the subject of the prize medal conferred by the Society for the promotion of the Fine Arts.

We have but few specimens of ornamental lead work in England. The only example, and that of doubtful antiquity, in which a lead cresting occurs, is that at Exeter; the example is useful, in showing how the rolls may be made to finish under the lead ridge. A ridge terminating in the very same outline occurs in the Bayeux tapestry, 1066, on the castle of Mont St. Michel, or, as it is there called, "Ad Montem Michaelis." The gilded stars that are often seen on perpendicular roofs, especially over the altars, and which form such a favourite feature in the French finials, are usually formed of lead. In the absence of English examples we must go to our French authority again for a description of the *girouette* or *epi*, for we have no English term equivalent, except, perhaps, hip knob, which, unfortunately for our purpose, is rarely covered with lead.

The French word *epi* is used in the parish records of St. Laurent de Rouen as early as 1470, and being derived from spine, has a spiky and appropriate sound. It appears that they were indicative of the rank of the proprietor, so that a pennon ranked for a knight, and a banner for a knight banneret, and so forth. Coats were often employed for the termination of these *girouettes* as with us.

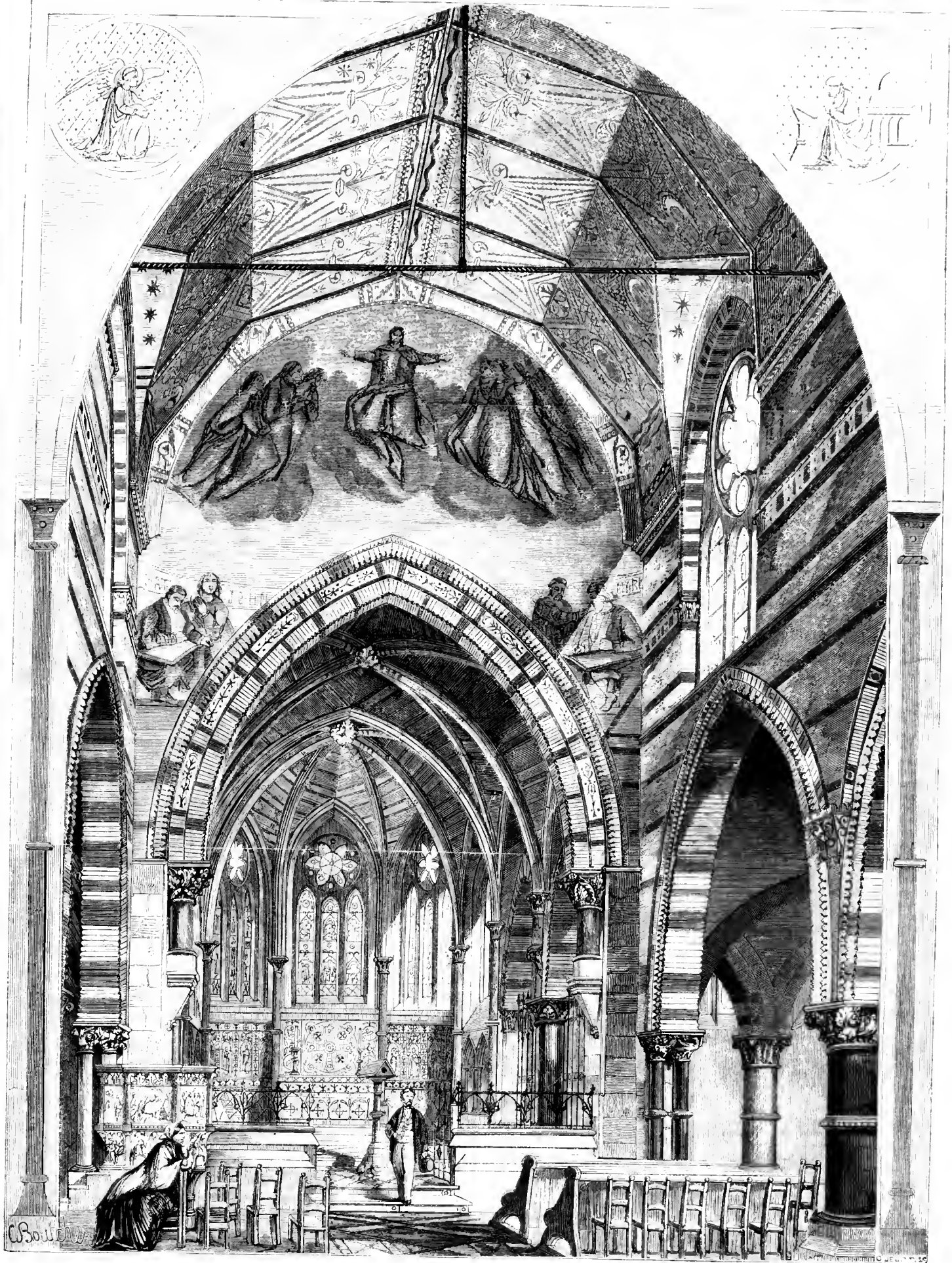
The most remarkable examples occur on the Chapel of the Virgin, at Evrenx; another on the Church of the Madeleine, at Verneuil; another on the Tourelle aux Pastourelles, at Rouen, and others on the Hôtel du Bourgtherould in the same city. This latter partakes of the fault of the building to which it belongs—excess of elaboration, but we may gain a few hints from it with profit; the terminal ornament is very graceful, and is frequently adopted in modern ironwork, the nest-like enrichments through which the seam passes are legitimate developments of sheet-lead ornament cut into foliated forms, and then bent round a centre—care being taken that no part should hold water. With the Renaissance style the *girouette* partook of the universal pride and bearing. Fable, Allegory, Mythology, social life, and religion were all pressed into the service, and furnished subjects. There is a terra cotta specimen of this date given in Caumont's *Abécédair*, in which a pelican forms the principal feature. Another representing a bird roosting may be noticed in a *girouette* at Chalons-sur-Marne; you will remark the difference of treatment between the fourteenth and sixteenth century birds—the earlier example being wonderfully abstemious in ornament, and the terminal quite flat to serve as a vane, the other overcharged with foliage and masks of which latter there are no less than thirty-two, and useless as a weather-cock. I often wonder that birds are not more frequently introduced as terminal ornaments to gables. I have seen pigeons perch themselves on the verge of a belted gable, conscious that they were the right thing for the place, and I have always acquiesced in their opinion. M. Boust, the French architect, with whom I have the honour to be acquainted, has used a similar *girouette* to a dove-house, near Levarot. The Hôtel Dieu, at Beaune, contains some very fine specimens of the *girouette*; you will find some illustrations of them given in Mr. Clutton's work. He says the effect of the *epi* would be valueless if it were not backed by the high-pitched roof of the main building. I don't quite agree with him there; were a background always necessary for these ornaments lofty crestings would at once be inadmissible, and the finial, which so invariably terminates the cone of the apse, would be the greatest offender of all.

Another method of treating lead work, which I shall do little more than allude to, is the surface decoration of sheet lead, either with gold or paint, or by the process of toning described by Mr. Burges. In the first place, I do not quite understand the description of the process; and, in the second place, I look upon this art as supplemental only to the proper understanding of plumbers' work, which at present is confined to the most unenlightened class of mechanics. To some extent, indeed, there seems to be a rational argument for its adoption, as may be inferred from the following remarks taken from De la Quernie.

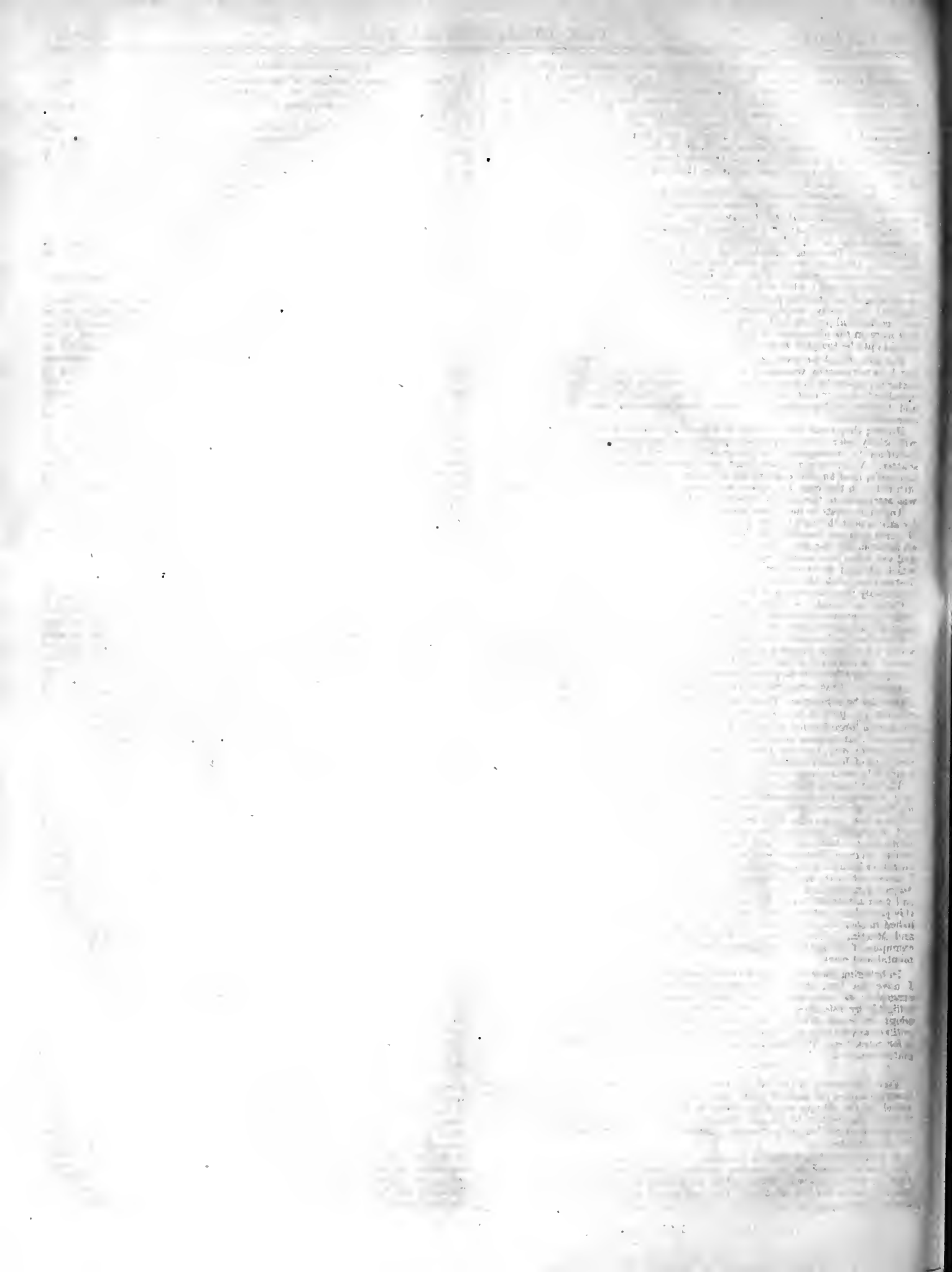
The lead work of the pinnacles of Notre Dame de Chalons-sur-Marne still exhibits traces of ornament and a figure of St. Sebastian, which are not bossed out as some persons believe, but which have been painted and gilt, though time has caused all the gilding to disappear, where the metal has not been covered from the air by gilding or paint, the thickness has been diminished by oxidation. Mr. Clutton says:—The roof of the palace at Blois is covered with auger slates, and the lead flashings upon the ridges of the main roofs, and those of the dormer windows, were historiated with the arms of France and Brittany, and with the badges of the Cordeliers and porcupine. The drawing found in the archives of St. Vincent, at Rouen, is interesting, as showing the way in which this method of enrichment was intended to be carried out on a crested ridge.

One of the most remarkable properties of lead is its fusibility; and we might, therefore, naturally expect to find some indications of this fact having been taken advantage of by our Mediæval artists; and yet, with few exceptions, this is not the case; it is a little curious that the few exceptions apply principally to fonts

* Paper read before the Architectural Association, by Mr. T. W. GOODMAN, on 25th April.



INTERIOR OF THE CHURCH OF ST. JAMES THE LESS, WESTMINSTER.—MR. G. E. STREET, ARCHITECT.



and coffins—whether there is anything symbolical in this connection with the two terminal of life is not evident. The Glossary gives an account of lead fonts to be found at Brookland, Dorchester, Warborough, Warcham, Walsford, Churton, Childrey, Clewer, Long Willenham, &c. The stone font at Ashover, in Derbyshire, is ornamented with leaden figures of the Apostles. Examples are likewise to be seen on the continent, as at Bourg Achard, and the leaden font in the Museum at Rouen. I once made a drawing of a font in Shelden Church, near Birmingham, the exterior of which, as well as the interior, is lined with lead, carefully bossed round the tracery—a painful instance of perverted ingenuity.

Among the most remarkable coffins are those found under the effigies of knights in the Temple Church.

Lead has been used for purposes of sepulture from a very early age; the older and more usual custom being to use sheet-lead and work it up into the form desired. It appears that the Romans seldom or never used solder in the construction of their coffins; for what reason I cannot say. I found a description of a Roman coffin in the "Archæologia," I think, discovered at Newport, in Monmouthshire. The stone coffin lay in a trench, well packed on either side with charcoal; the inside was lined with lead, and iron bars supported the lead cover; the lead remained entire, but the iron had disappeared. But, to return to the subject of cast lead; what are the objections to its use? First, the difficulty of securing and maintaining good edges and true planes; then its expense; then its weight; and, lastly, the objection that applies to all cast work—the substitution of a mechanical process for a work of art to geometrical forms, such as the suns and stars on the *girouettes* or roof timbers. The objection does not apply, and I should only be too glad to see a few more of them introduced.

The use of lead for eaves, gutters, and down-pipes is fast going out of date, but I do not see why we should not specify ornamental heads to be made in this material, especially in small works. That down pipes may be treated artistically, whether in lead or cast iron, no one can doubt. The new school in Endell-street, and the bank in Blackfriars-bridge-road, have each some points of originality to commend them.

Having thus come round again to a more utilitarian aspect of the subject, I will briefly refer to the important question of lead pipes and cisterns, and their liabilities to impregnate the water which passes through them with noxious matter. You may remember that a lead pipe at Tunbridge, a quarter of a mile in length, used for the conveyance of water, had to be taken up and iron substituted. In this case the water was exceedingly pure, and the impregnation was attributed to the solvent powers of carbonic acid gas.

Ammonia exists in the purest water, so that purity alone is no guarantee for its safe transit through leaden pipes, but rather the reverse, as we shall find. Neutral salts are beneficial, because they retard the corrosive action by forming an impermeable deposit. The purest water that we can obtain is by distillation, and yet it has been noticed that the leaden lids of cisterns, on the under side of which distilled drops of water accumulate, are liable to rapid corrosion and final destruction, while the leaden cisterns themselves do not suffer. This must arise principally from the action of ammonia in the distilled water.

Great care should be taken that no decayed animal or vegetable matter is suffered to accumulate at the bottom of lead cisterns, as it may decompose the salts of lead and dissolve the coating by acetous fermentation.

Christien, in his treatise on Medical Jurisprudence, suggests that rain or snow water for culinary purposes should not be collected from leaden roofs, nor preserved nor conveyed in lead, and that the same rule applies to springs of unusual purity, where the saline impregnation is so small that it does not exceed $\frac{1}{10000}$ part of the water. That spring water which contains $\frac{1}{10000}$ part may be safely conveyed if the salts be sulphates. That lead pipes cannot safely be used where the water contains $\frac{1}{3000}$ part if the salts be muriates. That spring water, even though it contains a large portion of salts, should not be kept a long time in contact with lead, and that cisterns should not be covered with lids of this metal. I may mention, by the way, that the plan is sometimes adopted of giving lead cisterns a thin coat of Roman cement; it steadily adheres, is perfectly insoluble, and forms artificially what neutral salts do chemically—an impermeable deposit.

The last branch of ornamental lead work, perhaps the most familiar to us all, as it combines the ornamental and useful, is the plan of glazing in patterns. To me there are few records of antiquity more interesting than the apparently frail relics whose spider-like rays are hung to catch the first beams of the rising sun, and so impress them into the service of the church, whether by saintly legend or Bible song. And yet, though so frail—for what is weaker than lead, or more easily fractured than glass—there are abundant remains for us to study, and, if imitation is anywhere pardonable, for us to copy. The most interesting specimens I have met with are at Mantes Beauvois, St. Etienne, at Caen, Chalons-sur-Marne, Louviers and Bayeux. There are comparatively few in Italy, but I may call your attention to one at St. Fortunato Todi. I need not use illustrations to this part of my subject, for I suppose most of those I have mentioned are published in some shape or other. Take, for example, that splendid work of Cahen and Martin, "Monographie de Bourges," and you will see what wonderful examples of thoughtful and patient design we have in this one branch of ornamental lead work.

In bringing these few remarks to a conclusion, I must express my regret that I have not been able to give practical illustration to my remarks by actual examples; we have seen in two recent papers how much may be rendered intelligible by reference to models and specimens, and I am sure that we can adopt no better plan, if called on to design any ornament in which foliated outlines are introduced, than to practise on a piece of thin sheet lead, and model it for ourselves. Perhaps, in time, we may even rival Mr. Skidmore's golden-plated acanthus.

THE GUESTEN HALL, WORCESTER.—The Dean and Chapter of Worcester have presented the sum of £100, and the roof, or what remains of it that is sound, of the old Guesten Hall, which is now in process of being pulled down, towards the erection of the new district church which it is proposed to build in the parish of St. Martin's, near the railway station, under the direction of Mr. W. J. Hopkins.

A plan is on foot to erect a fountain, from a design by Mr. G. G. Scott, in St. Giles's, Oxford, as a memorial to the Prince Consort.—Bradford proposes that its memorial should consist of an Institution for the promotion of art and science, under the title of Albert Institution. It is hoped to raise £10,000 for this purpose.

ARCHITECTURAL ASSOCIATION.

An ordinary general meeting of this Association was held on Friday evening; Mr. THOMAS BLASHILL, the Vice-President, in the chair.

Mr. C. J. ADAMS, hon. sec., read the minutes of proceedings at the last meeting, which were confirmed.

Nominations.—The following gentlemen were nominated for membership, and will be balloted for at the next meeting:—Mr. John Eastby Goodchild, 22, Remington-street, City-road (proposed by Mr. A. W. Blomfield, and seconded by Mr. T. Roger Smith); Mr. H. J. Shepherd, 5, Prince-street, Chelsea (proposed by Mr. Arthur Smith, and seconded by Mr. C. J. Adams); Mr. George Patrick, 18, Gloucester-villas, Loughborough-road, Brixton (proposed by Mr. F. Sills, and seconded by Mr. Taylor); Mr. T. Barker, 29, Offord-road, Barnsbury-park (proposed by Mr. Winbridge, and seconded by Mr. C. J. Adams); Mr. John R. Gover, 7, Sydney-terrace, Portland-place, Clapham-road (proposed by Mr. G. R. Green, and seconded by Mr. T. M. Davies).

Opening of the Library.—The CHAIRMAN announced that the library was now open, and that books could be obtained by members on application to the curators.

Lead Work.—Mr. T. W. GOODMAN read a paper on Lead Work, which will be found on another page.

The CHAIRMAN said they had had a most interesting lecture from Mr. Goodman, and it did not at all, in his opinion, clash with Mr. Skidmore's lecture, which referred chiefly to gold as a metal. Those who had been out of England for how-ever short a time, must have been struck with the amount of lead work to be found in France, Germany, and Italy, as compared with the small quantity in this country. He was sure the lead cresting looked a great deal better than any lighter cresting; at Notre Dame, at Paris, there was an immense cresting of that kind, some 3 or 4 feet in height. Such things were very common on the continent, and remembering the ease with which lead could be cut and beaten out, and the great applicability of lead for ornamental work it seemed strange it had not been more used for decorative purposes. As to the question of pure water being damaged in lead cisterns, that appeared to him a very simple thing, and easily explained. If water was pure it had a tendency to attract impurities from any material through which it might run, thus making itself impure. The purer the water the stronger the tendency it had to take hold of the impure matters in lead, and lead cisterns were very apt to get out of order. Lead could easily be cut into shapes, and it seemed especially desirable to have ornamental lead crestings.

Mr. GOODMAN was of opinion that iron work would supersede lead work to a considerable extent.

After a brief conversation of a desultory character, a vote of thanks to Mr. Goodman was carried by acclamation, and the meeting separated.

RECLAIMING LAND FROM THE SEA.

IN a paper read recently before the Liverpool Polytechnic Society, by Mr. T. ANNOTT, President, the author said this subject has occupied far too little attention in an old and thickly peopled country like ours, where the value of land has outrun that of nearly everything else; fettered, too, as it too often is, with leases and other tenures which reduce it to a mere loan from the superior after all. And this taken in connection with the extension of railways along our seaboard, as the means of making much land now overflowed available for culture or pasture for cattle, attracted my attention to the matter as one worthy of some consideration and notice. In the Netherlands we see thrift and plenty, and no people more respect the dignity of labour than the Dutch; their cities, too, are well built, neat and clean, and the people patterns of intelligence, industry, and moral worth; Brougham has said, in proof of their industry, that they inhabit a sandbank reclaimed from old Ocean. And certainly the lowest part of the immense alluvial tract of Western Europe lies between the mouths of the Scheldt and the Ems: while it is matter of history that much of our own eastern counties have been submerged. Off the Rhine and the Meuse the remains of forests are covered by the German Ocean, and paved roads, villages, and the traces of former tillage lie buried in the neighbouring morasses, and dykes and embankments hem in the land all around. The hydraulic works of canals, &c., are said to have cost Holland £300,000,000, and the Waterstaat, or Board of Marine Engineers, has been maintained for centuries by that Government. The ocean dykes are 30 feet high by 70 feet base, faced landward with wood and stone, and seaward with mats of rushes and flags staked to high water mark. Amsterdam is built on piles, and so intersected by canals as to form ninety islands, requiring 280 stone and wooden bridges, one of them 600 feet long. The Polders are tracts of country lying under the water level of the adjacent country, and exceed 1,000 in Mid-Holland, some 20 feet under the sea level, and in Rhineland, while there are only 76,000 acres of reclaimed, there are 173,000 acres of polder land, and 56,000 still redeemable. Four plans are adopted of reclaiming polders: first, by gaining it from the sea by engineering skill; second, by ground gained from the rivers by circumscribing and diverting and deepening their currents; third, by draining off lakes; fourth, by digging turf for fuel in such quantities as to make extensive depressions, and draining it—all requiring an extensive system of drainage, sluices, ditches, canals, and embankments, with extraordinary mechanical agencies to elevate the water above the surface of the contiguous rivers, &c. Haarlem Meer was formerly an inlet of the Zuyder Zee, 33 miles in circumference, and 13 feet below the lowest tides, and, owing to the soft alluvial of the surrounding country, it had more than once threatened damage both to Amsterdam and Leyden. In 1839 a dyke and canal were built around the entire area to intercept drainage from the higher level, to provide navigation in lieu of the lake, and to form a channel of outlet for the water pumped out. The canal is 40 miles long, 9 feet deep, and widening from 125 feet to 148 feet. Three main sluices were placed at Katwyke, Halfge, and Spaarndam, the first and second merely self-closing floodgates; but at Spaarndam a propelling engine was used, and the lake was closed in 1848, when three engines were erected on piles driven down 40 feet. What was formerly a waste expanse of water is now exceedingly fertile land, in fine cultivation, enlivened by farms, villages, and a thriving population, and in proportion to the other inhabitants of Holland, this old bed of the lake is capable of sustaining 50,000 people in comfort. That thoroughly-practical and energetic people, the Americans, much in the spirit of the early Dutch settlers there, in addition to the many hundreds of miles of embankments along their alluvial rivers to save the land, and connecting so many of their vast rivers by canals, have also gained

on the seaboard, as exemplified by the frontage of new streets at New York, Boston, San Francisco, and elsewhere. But no land promises better opportunities and returns than our own for works of this nature, for the Swash alone, off Norfolk, occupies twice the space of Haarlem, and is very shallow. There is also Morecambe Bay, the mouth of the Dee, and many other points worth millions, along the sea walls of which railways might be carried, and thus pay for themselves. And in Ireland there is Loch Neagh, ten times the extent of Dublin Bay—fifteen miles by seven—and not far from the coast, and considerably above the tide water; and the same remark applies to nearly all the lakes in the north-west of that island. Indeed, 467,000 acres are covered by water there, and 6,000,000 acres still unoccupied bogs and mountain land, to the reclamation of which public money could not be better or more profitably turned in times of a famine of food or labour.

The works of Vauban and other French engineers show how much attention has been directed to sea walls and embankments in that country, and at the mouth of the Seine and elsewhere along their exposed coast the trumpet-mouthed and wave-line harbour entrances are so well adapted that I have seen a large transatlantic steamer come into Havre nearly at full speed, through a heavy and dangerous outside swell, and pass into the docks; and the plan of having open spaces, with piles driven at a great incline, serves well to spend the force of the waves and save the masonry. I would suggest that funnel-shaped embankments are best adapted in entering from an open seaboard, and to leave ample room inside for water storage, which can alone keep open any port, and is, no doubt, the source of the advantage we have in the scouring out of the channels of the Mersey; and if we ever allow a silt up in the estuary higher up, it will affect the channel outside.

CHURCH OF ST. JAMES THE LESS, UPPER GARDEN STREET, WESTMINSTER.

THE admirers of Mr. George E. Street have at length the satisfaction of seeing the metropolis adorned with one of his original and beautiful works. Hitherto, we have had to rest content with looking upon representations of them upon the walls of the Royal Academy and Architectural Exhibitions, or have been obliged to take a journey—well rewarded, we admit—away from London to look upon the churches themselves. We know not the cause of this apparent neglect of one of the ablest of our church architects. Wherever we light upon his skillful drawings or examine his buildings, we immediately recognise the individuality which he stamps upon them. He is one of the few who have studied Medieval architecture with real and marked advantage—not to give us simply a reproduction, but a further development of it. He is not satisfied with making a collection of fragments and fitting them harmoniously together, but he makes what in less able hands are hard, rigid features as pliable as clay in the hands of a potter. It is the freshness and life breathed into everything he touches, which, spite of faults, makes his buildings so interesting. We cannot read them at a glance, because they are not made from familiar stereotyped plates; but we can with pleasure walk round, examining carefully every bit of detail, and, regarding them from every point of view, find with each step ever varying enjoyment.

Through the liberality, mainly, of the Misses Monk, daughters of the late Bishop of Gloucester, the new church of St. James the Less has been built, and Mr. G. E. Street was employed to design it. It has now been some few months consecrated and opened for service. We gave, at page 663 of our last volume, a detailed description of the building and its decorations. The interior is of red brick. The columns are granite, with free-stone caps and bases. The font is of alabaster. The pulpit is somewhat over-charged with carving. On either side of the altar are figures let into the stone in a sort of niello. They represent typical women of the Old and New Testaments. The ceiling is elaborately and rather too strongly painted. In the arch over the credence table there is a fine piece of sculpture in low relief, representing, grouped vine-leaves and corn-stalks. We must, however, refer to our former description for other details. We shall be glad if our view causes our readers to visit the church and give it that study which its beauties deserve.

The exterior, unfortunately, is so hemmed in by houses that from no one point can it be seen in its entirety. The tower springs boldly up from the ground, and is connected with the church by an arcade porch. It stands like a stern sentinel, proud of its position, beside the building, and reminds us in this respect, as well as in some portions of its detail, of the finest of the Lombard towers. It is a pity that funds cannot be had to buy the adjoining houses, so as to effect a thorough clearance round this noble edifice. Meanwhile, we would suggest to all visitors to seek out a narrow court which leads to the chancel end of the church, and enjoy thence the best view which can now be obtained of the building. The full extent of the church cannot be seen from it; but the tower, as there seen, groups very picturesquely with the apse and transept, and gives a good idea of what the church would appear if disencumbered from its belt of ugly houses. The contract has been most satisfactorily carried out by Mr. Myers.

PRESERVATION OF HAMPSTEAD HEATH.—A public meeting having been convened for the purpose of taking such steps as might be deemed most expedient for preserving Hampstead-heath from building operations, a lengthened discussion, in which Mr. Clowser, Mr. Worth, and other gentlemen took part, occurred, and Mr. Gurney Hoare said he was quite willing that some concession should be made to Sir Thomas Wilson, if he (Sir Thomas) would in his turn give a written assurance that he would not build on the heath. Ultimately a resolution to the effect that if Sir Thomas Wilson should apply to Parliament for an Act enabling him to build on that portion of his estate which adjoined Finchley-road, the meeting would not oppose such application provided he gave a written promise that he would not encroach on the heath, was put and carried.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

ON Monday last an ordinary general meeting of this body was held; Mr. WILLIAM TITE, M.P., F.R.S., the President, in the chair.

Mr. T. HAYTER LEWIS, hon. secretary, read the minutes of the previous meeting, which were found correct and confirmed.

Donations.—Mr. JAMES BELL, hon. secretary, announced several donations, amongst others, statistics respecting the colony of Victoria, including official reports on architectural and engineering matters, accompanied by an elaborate plan of the mining districts and several other plans relating to the colony. A vote of thanks to the donors was passed.

Presentation of Prizes.—The CHAIRMAN said, part of the business of that evening was of a very gratifying character, because they had the opportunity on the present occasion of presenting the medals and other prizes disposed of by the Institute, for the encouragement of those who had paid attention to the art in which, and about which, they were all of them most interested. The first and the most important thing was, naturally, the presentation of the Royal gold medal—(hear, hear)—and he was sure he might say they were all much gratified in being able to record that it had been the good fortune of the Institute to have the opportunity of presenting a memorial so valuable in itself, and so interesting in all its connection with architecture during now a very considerable period, to so distinguished a gentleman as Professor Willis—(Hear, hear). They were all aware her gracious Majesty had been the patroness of this Institution almost from the very commencement of her reign; but it was not until the year 1848 she was so kind as to place at their disposal, annually, this very elegant and valuable testimony of her approbation. In 1848 the first Royal gold medal was placed at their disposal, and he thought the list which followed showed they had not been unmindful of her Majesty's gracious kindness. The first name on the list of honour was that of Professor Cockerell, to whom the Royal gold medal was presented as a testimonial of their respect and esteem, and of admiration of his great talents and merits as an architect. The Council very wisely resolved, with the gracious permission of her Majesty, to present the Royal gold medal each alternate year to a foreigner eminent in his profession, the medal being thus thrown open as a reward to English or foreign architects who had distinguished themselves in their profession, to distinguished writers on architecture, or to men of science relating to architecture of any country, who might have designed a work of high merit. Therein he thought the Council acted very wisely; and, immediately availing themselves of the gracious permission of her Majesty, and after honouring the most eminent architect Professor Cockerell, they presented the Royal gold medal to Chevalier Casina, whose genius all English architects would well remember, as well as the incidents which terminated his life before he returned to Rome. He needed not to go further into the list of the eminent men who had received the Royal gold medal from the Institute, but proceed at once to the immediate business of the evening. Having acknowledged on various occasions the efforts of men of science and genius, English and foreign, the Institute had in the present instance, with the gracious permission of her Majesty, awarded the Royal gold medal to the Rev. R. Willis, Jacksonian Professor, Cambridge—(Applause). Now, he felt it to be a matter of very considerable difficulty and delicacy to speak much about a man in his presence—it was a proceeding not very English in its character, not very much in unison with the character and habits of the English people to praise one another—yet he must observe he might be pardoned for saying a few words of praise of their kind and excellent friend Professor Willis, who was not a professional architect; and not because he had produced a work tending to promote the art of architecture, or the various branches of science connected therewith, but because he had produced many such works—(Applause). He was looking, a few days ago, at some of the works of Professor Willis, and held in his hand a book which, as far as he knew, was the first work by Mr. Willis on architecture. It was dated 1835, and was a work on the middle ages, particularly on Italy; and that work, though so long published, had lost none of its interest at the present day. Much that that work contained had led to further inquiry, and had been of the very greatest possible interest, importance, and value to architects. He found in this book a text-book, teaching the very earliest suggestion on Italian Gothic architecture. Well, then they found their friend Mr. Willis came before them with a strong claim that followed almost immediately afterwards, in following Professor Baily, and being appointed Jacksonian Professor, at Cambridge, of experimental philosophy—a chair which the sister University of Oxford had not; and the University of Cambridge was fortunate in having instituted such a professorship and in having appointed such a professor—(Applause). Then Mr. Willis had never selfishly clung to one particular view of architecture, and in one of his papers he found he gave an essay on the difference between the entablatures of Egyptian and Grecian architecture. Then his elaborate essays on cathedrals, especially Canterbury, had always been of much service, and he had done a great deal in the way of showing them how observations should be made on such matters. At last came the honourable testimonial which he had the pleasure of presenting Mr. Willis with—the gold medal of the Queen. He was sure they were all much indebted to Mr. Willis for his papers and contributions, in his encouragement of the art and science of architecture. His teaching had been as useful in mechanical appliances and mechanical science as it had been found valuable in reference to all that was useful, as well as elegant and ornamental, in architecture. No medal was more honourably deserved, and no medal was ever more worthily bestowed, than that which it was now his pleasure to hand to Professor Willis—(Applause). (The Chairman then presented the gold medal to Mr. Willis amidst loud applause.) He hoped that health and strength would be given to him so that he might be enabled to continue his most useful, most honourable, and most valuable labours—(Applause).

Professor WILLIS, in returning thanks, said he found himself very much in the same difficulty as that to which his friend in the chair had alluded in a kind speech, in which he had greatly exaggerated any claims he might have; but he could hardly thank them for the great honour which had been conferred upon him that night, without saying something of himself. The honour conferred upon him that evening was one of the great honours he had happened to receive in the course of his life, and the testimonial which he had received from the Institute, conveyed in such flattering words from the Chairman, he should never forget. In reference to the works which he had ventured to publish from time to time, he would only mention one, which would be still dearer to him than it was ever before; it was one which might have contributed to the reputation Mr. Tite had assigned to him, and he should always look at it with pleasure, because it was published by the Royal Institute of British Architects—the work he

referred to was an "Essay on the Vaults of the Middle Ages." He assured the members of the Institute he should never forget the honour they had bestowed upon him, or the kind way in which the President had spoken of him—(Applause).

The CHAIRMAN said the next reward he had the pleasure of presenting was the Institute silver medal, with five guineas, to Mr. F. R. Wilson, for illustrations and a description of the Church of St. Peter and St. Paul, Breckburn Priory, Northumberland.

Mr. WILSON briefly acknowledged the compliment.

The CHAIRMAN next presented a prize in books of the value of five guineas, instead of the Soane medallion, to Mr. C. H. M. Milham, for a design for a museum of sculpture and painting.

The CHAIRMAN then presented Mr. Cockerell's prize of ten guineas to Mr. A. W. Davies, for a design for a small market-house and room above.

The CHAIRMAN presented the next prize (an Institute one in books) to Mr. R. P. Spiers, for a design for a villa.

The CHAIRMAN said the next prize was one of ten guineas, which he had offered for the best study in something Classical, because, though a great lover of Gothic architecture, he was wishful that Classic should not be forgotten. The prize was awarded to Mr. H. S. Legg, for designs for a small town-hall and a railway station.

The CHAIRMAN said the next prize he had to present was what was known as the student's prize (in books), and they were always very anxious to encourage students in everything that was good. The prize was awarded to Mr. R. H. Carpenter, for a design for a dispensary, suited for a manufacturing town.

The CHAIRMAN then presented Mr. S. Fry, student, with a prize in books, for the best series of monthly sketches.

The CHAIRMAN, on the part of the Council, urged on their young friends who had received prizes to exert themselves still further. The prizes were not in themselves of so much value, but as being calculated to call forth application, industry, and taste, they were of great importance.

The Architecture of Palestine.—The Rev. GEORGE WILLIAMS, B.D., then read a paper by Signior Pierotti, architect to the Pasha of Jerusalem, "On Jewish and Roman Architecture in Palestine, from the earliest period to the time of the Crusades." Signior Pierotti was present, and pointed out on various plans and drawings places referred to in his paper, which will be found reported in another portion of this issue.

Mr. J. FERGUSSON, having been called upon by the Chairman, said he really did not know that the paper which had been read called for any remarks from him. What Signior Pierotti had given them that evening was not new. It was not an account of his discoveries, but an account of a variety of buildings existing in Palestine which they knew of before. He had expressed nothing new, and, therefore, it was not necessary he (Mr. Fergusson) should refer to the subject. If Signior Pierotti had confined himself to his own researches and discoveries, as he did at the Architectural Museum, it would have been well worth while to discuss the matter thoroughly, because that gentleman had, with great industry and intelligence, and with great success, explored the underground watercourses and other matters of interest; but all the points he had brought forward that evening were not new, but well known. As to the Golden Gateway, Signior Pierotti said it was not a building of Herod or of Justinian; if it was meant to be said it was a building of Constantine, they all knew that Constantine did not build the temple, or a part of the temple. He did not quite agree with what Signior Pierotti advanced about the Holy Sepulchre; and as to what were called Pools of Solomon, he should like to know why they were called so, for they were not mentioned in the Bible or in Josephus. Signior Pierotti had not brought forward any building they did not know before, nor had he brought forward any new idea on the subject of the buildings in Palestine, and though a book on such a subject would be valuable, he did not know that he had anything to say on the subject of the lecture. He thought, however, they were all indebted to Signior Pierotti, who, for eight years, had surveyed and brought to light the architecture and archaeology of Jerusalem; in that way he had done great service, and he (Mr. Fergusson) should hail with pleasure the publication of his work. He proposed a vote of thanks to Signior Pierotti for his valuable labours in Jerusalem, the results of which, he hoped, he would very soon give to the world in the work he proposed to publish.

The Rev. GEORGE WILLIAMS seconded the vote of thanks. The only share he had in the business of the evening was simply reading a translation of the paper by Signior Pierotti; but he was surprised to hear Mr. Fergusson say there was nothing new in the paper, for the description of the Pools of Solomon, and other objects, were new; objects, which he (Mr. Williams) never saw when he was in Palestine. And it was a great merit of Signior Pierotti that he had given them something positive to go upon, for formerly they groped in the dark. Now that Signior Pierotti had sited the dust they were in a better position, and the publication of his work would, he (Mr. Williams) thought, lead to important results. He quite felt himself that they did not at all yet know the value of the discoveries of Signior Pierotti nor seen their way to the inductions from the discoveries he had made, and they would, he was sure, all apply themselves to his book when it was published. It was certainly satisfactory thus far that Mr. Fergusson had been confirmed in his previous views on the subject of Jerusalem, and so had his (Mr. Williams's) been confirmed, but he certainly hoped that would not be the most satisfactory result of Signior Pierotti's discoveries, and that they might arrive at some satisfactory conclusions in which the members of the Institute would be able to acquiesce.

The CHAIRMAN said he never saw any collection half so complete of the ruins of Jerusalem as that which that evening adorned the walls of the Institute. He proceeded to say that he recollected Barry, very particularly on his return from Syria, remarking on the character of the masonry there, that was, the courses of stone being set one on the other in the Jewish masonry; but that was not peculiar to Jewish masonry, as he had seen it in Perugia. In the great minuteness of the illustrations much of value was to be found, and when the promised work was complete they might furnish suggestions for a better acquaintance with the most interesting country referred to.

Mr. WIGLEY was happy to say that Signior Pierotti had given, in a practical way, a notion of its architecture worthy of the Holy Land—a country where the most important events had taken place—and it certainly was a most important country at the time of the Jews and Romans. In his opinion there was much novelty brought forward in various portions of the paper of Signior Pierotti; but he thought the lecturer made mistakes in his remarks about the times and dates of masonry, whereas they referred, according to his idea, to different positions

of the building. As to the Golden Gate, Mr. Fergusson said Signior Pierotti stated it was not Herodian nor of the Justinian period; but he (Mr. Wigley) thought Signior Pierotti said at Brompton it was Justinian. He (Mr. Wigley) thought, however, that they had here a complete piece of work of the time of Herod the Great. In Justinian's time there could be no reason for such a gate being constructed on the spot where it was. As to the Southern Gate, which was not alluded to in the lecture, it seemed to be of the same period as the Golden Gate.

Professor DONALDSON said, having observed remains of antiquity in various parts of the Roman empire, his opinion was, that the Golden Gateway did not date from any remote time, or from a refined period of Rome. Even at the time of the Antonines they did not find architecture so degraded as in the details of the Golden Gateway before them. They had proof of that both at Balbec and Pdimyra, so that the Golden Gateway must have been of a much later period than that assigned to it. He proceeded to say that he felt convinced that it would be difficult to bring before them satisfactory historical and architectural evidence of the peculiar construction of a chamber, by looking, as the lecturer had done, down a hole. When he (Professor Donaldson) visited the tombs of the Egyptians, with the glimmer of the lights it was difficult for him to discover the construction of the tombs. Therefore, it would be difficult, by looking through a hole of small diameter, to tell what was the peculiar construction of a chamber. Signior Pierotti alluded to a parallel architecture in Greece to what he found in the East; but he (Mr. Donaldson) did not find the parallel, and he saw a much more recent construction, both in the forms of the stones and the modes in which they were put together, than Signior Pierotti would lead them to believe these monuments were of. At the same time, he begged to award to Signior Pierotti the due meed of praise for bringing before them all he could ascertain, but still to warn him against being too easily led away.

The vote of thanks to Signior Pierotti was carried by acclamation, and the meeting separated.

THAMES EMBANKMENT.

THE following is a copy of Mr. McLean's report to the First Commissioner of Works, of the estimated expenditure to carry into effect the provisions of the Thames Embankment Bill; distinguishing the cost of the approaches to the embankment, and of the street between the embankment and the Mansion-house, including compensation and all other expenses; also the estimated cost of the Low-level sewer, and the length of the embankment and of each street.

Estimated expenditure to carry into effect the provisions of the Thames Embankment Bill, including compensation and all other expenses.....	£ 1,500,000
Estimated cost of the approaches to the embankment.....	80,000
Estimated cost of the streets between the embankment and the Mansion-house, including compensation and all other expenses.....	500,000
The length of embankment between Westminster-bridge and Blackfriars-bridge.....	Yards. 2,235
Length of street from embankment to Mansion-house.....	1,007
Length of approaches to embankment:—	
From Whitehall.....	230
From Whitehall-place.....	321
From Villiers-street.....	105
From Buckingham-street.....	79
From Cecil-street.....	22
From Wellington-street.....	524
From Surrey-street.....	14
From Norfolk-street.....	208
From Arundel-street.....	26

Mr. Bazalgette states that it is not possible to give a close estimate for the cost of constructing the Low-level sewer within the embankment on the north side of the Thames without definite plans from which to estimate, but it may be approximately stated at £30,000, including the branch connections, but exclusive of the preparation of the foundations, cofferdams, and incidental works, which would be debited to the embankment.

THE POLYTECHNIC INSTITUTION.

THE directors have introduced several novelties to attract holiday folk to this Institution. Professor J. H. Pepper is lecturing "On Colour in General, and Coal Tar Colours in Particular." After alluding to tar, and tracing up from this disagreeable fluid the production of benzole, aniline, mauve, and magenta, the lecturer proceeds to show his audience some curious productions of colours; the experiments are shown with the assistance of the large voltaic battery and electric light. Stereoscopic views of "Paris as it is," shown by the new achromatic lenses, are by Mr. England. Then comes the lectures and *science* of Messrs. King and Matthews to fill up the interval before the display of a new dioramic series of dissolving views of London, in all its interesting epochs. These views are designed by Mr. Brown, and painted by Messrs. Childs and Hill. The Brouil family, and a musical and buffo entertainment by Mr. George Buckland.

PREVENTING INCRUSTATION OF STEAM BOILERS.—According to the *Mining Journal* Mr. Peter Taylor, Hulme, has patented an invention which consists in applying a pipe to the interior of a steam-boiler, which pipe is made with a longitudinal slot extending the entire length of the boiler, and communicating with an off-pipe, in which is a discharge valve capable of being opened and closed rapidly; the valve is of the usual mushroom shape, and in the boss, or on the spindle, is a diagonal tube, taking in a fixed stud; the groove is of such an inclination that by turning the spindle about one-half round the valve is opened sufficiently to discharge the sediment which enters the pipe through the slot above referred to. In some cases two or more slotted pipes are applied near the bottom of the boiler, and one or more are supported near the surface of the water in the boiler, to collect the scum; the pipes may be connected to the same blow-off valve, or each pipe may have its separate valve.

PUBLIC BUILDINGS.

MR. COCHRANE'S motion—that an address be presented to her Majesty, praying that she would be graciously pleased to issue a commission to inquire into the state of the public buildings erected by Parliamentary grants within the last twenty years, and also of the houses rented for the public service; and to inquire whether, by adopting more comprehensive plans of building, greater public convenience, greater economy and unity of design might not be attained—was brought before the House of Commons on Tuesday, and was lost by a majority of 67, there being 49 votes for, and 116 against, the motion.

The proposer said that the question of which he had given notice was one of great importance, and latterly questions connected with the improvements of the metropolis had attracted much attention. He rejoiced that he was able to introduce the subject without reflecting on the management or conduct of the First Commissioner of Works or that of his predecessors in office, every one of whom, he was sure, had done his best for the improvement of the metropolis. What he complained of was the viciousness of the system. Anxiety for a comprehensive plan of improvements, especially in this neighbourhood, dated as far back as 1782. Previously to that date the whole of the improvements of the metropolis were in the hands of the Crown. In 1782, however, so large a debt had been incurred with so little Parliamentary responsibility that an Act was passed to prevent the Sovereign from spending in improvements more than £5,000 a year without the sanction of Parliament, and a surveyor-general of work was appointed. Notwithstanding this Act of Parliament, very little amelioration in the system took place. In 1828 a most important committee was appointed on the subject, and the state of things developed by them was such that it was found necessary to change the whole construction of the system. In that year a change was made, and in 1831 the present Board of Works was constituted. In the whole of the evidence given before that committee the importance of having some comprehensive plan of improvement, instead of proceeding on the bit-by-bit system, was strongly urged on the committee. Mr. Wyatt expressed an opinion that nothing could be more extravagant or expensive than the existing mode of conducting public works. It was the intention of the Government to erect a Foreign-office close to Downing-street, and a site had been already purchased. As far back as 1839 a committee sat on this very question, and the evidence taken before it as to the condition of the Foreign-office was quite extraordinary. The witnesses said there was a great sinking in the centre of the Foreign-office, the party walls had sunk considerably in consequence of the unevenness of the floors. The architect stated that he had put bars under the floor, beams above, and other beams bolted through the front and back walls. It was further stated that on one occasion, while an animated discussion was proceeding between a Foreign Minister and an ambassador a portion of the ceiling fell on their heads. Such was the state of the Foreign-office twenty-three years ago, and not a single stone had been laid of a new Foreign-office. As to the Record-office, any person visiting it must be astonished at the state in which the records were kept. All the most valuable records of the country were heaped up in a number of small buildings crowded round the Record-office, and at any time a fire might destroy the greater portion of the most valuable records of the country. A State Paper-office was built about thirty years ago; in 1855 it was proposed to add a story to it, and now it was intended to pull that down. He believed that already the whole of the records in that building had been swept into those miserable hovels which clustered round the Record-office. Then take the Excise-office, the Inland Revenue-office, which had cost £100,000, but, notwithstanding this expense, the Inland Revenue Department occupied ninety rooms in Somerset House, and the building itself was deficient in accommodation. As to Buckingham Palace, Lord Russell, in 1827, pointed out the extraordinary and inconsistent mode of proceeding which had been adopted with regard to that building. First it cost £240,000; then were added the wings, then a front, then a ball-room; and the result was an expenditure of £1,200,000. The most glaring case of all was the War-office, of which a short time ago there could have been no less than seventeen different departments scattered over London. At present, including the War-office in Pall-mall and the Horse Guards, there must be ten or twelve. Sir Charles Barry had stated before a committee that the greatest public convenience must arise from the whole of the public buildings being together. Mr. Hunt likewise stated that the bit-by-bit mode of proceeding was most inexpedient, as the owners of property never failed to ask extraordinary prices for the sites. He also quoted the evidence of Sir Charles Trevelyan, who was in favour of the concentration of the public offices in Whitehall and the vicinity of the Houses of Parliament, and referred to Lord Llanover, who advocated the concentration in 1856. The Right Hon. Mr. Cowper, when examined before the committee of 1858, gave evidence showing the expense and inconvenience of the present mode of renting private houses as additional offices, and the committee reported in favour of the acquirement of the freehold of the adjacent property as the truest economy for the State. The committee of 1856 also reported in favour of buying up the whole property in the neighbourhood; and Mr. Hunt gave detailed estimates and calculations, showing that the property and land bounded by George-street, the Thames, the Park, and Richmond-terrace could be acquired for £1,000,000, and that the necessary buildings could be erected for a further £1,500,000. Half a million had been paid, or would be paid, for new Foreign offices. Was the House aware that for the hire of buildings for public offices, for the repairs upon them, and for the expenses of furnishing, we were paying £82,000 a year?—a sum which would actually pay the interest upon the £2,500,000. Since 1821, independently of the Houses of Parliament and the Royal palaces, we had spent £500,000 upon public buildings. He asked the House to sanction the appointment of a Royal commission to investigate these figures. He did not advocate any expensive plans; he did not wish to urge the House to any extravagance. On the contrary, he thought the probable result would be the production of a comprehensive plan which would afford unity, symmetry of design, and width of approaches—thus combining beauty with economy, and preventing a larger outlay. This was the proper time for maturing and carrying out such a scheme. It was proposed to spend £200,000 or £300,000 upon the Admiralty, and every sixpence of that money might much better be laid out to the improvement of this part of London. He simply wished the House to ascertain what buildings they wanted, and to adopt some plan. At present they were squandering the public money without any satisfactory result. His object in proposing a Royal commission was that it might decide what quantity of ground was required to concentrate the public offices; and then that an architect should be appointed to prepare an estimate for the buildings, which should be handsome, and in a superior style, but not unnecessarily expensive. The building should be competed for, and the Government should limit the

amount of cost. It was the duty of the Government to cultivate the public taste by the erection of handsome buildings. When other countries spent so many millions for that purpose, was it too much to ask this country to spend £2,500,000 for public improvements in this metropolis? Let the House consider how anxious continental nations were to adorn their capitals. Many hovels were collected in the neighbourhood of the Houses of Parliament, and it would be an economical arrangement, to say the least, to introduce improvements. We should be gainers by the change. It had been said that the question of embanking the Thames had been mooted for the last two hundred years, and that it was to the glory of the right hon. gentleman's redileship that he had commenced the work of embankment. Let the right hon. gentleman add another glory to his redileship by determining upon some plan for the erection of public offices which would be worthy of this country and an ornament to the metropolis.

In reply Mr. COWPER said he sympathised with the motive of the hon. gentleman who brought this subject before the House, and quite agreed with him in the desire to see this great metropolis embellished with handsome public buildings. The commission proposed would, however, if appointed, supersede the responsibility of the Executive Government in regard to such matters, and he was sure that the only security which the House had for due economy being observed was to fix a definite responsibility upon the Government. A commission—not looking upon the question in a financial aspect, as the Government would be obliged to do—would probably fix upon a comprehensive plan which would cost five or six millions to carry it out. This would produce a reaction in the House, and would divert it from attending to what was really useful and practical. The present moment also was inopportune for such an inquiry. The hon. gentleman spoke as if the Government had no comprehensive plan, whereas they were at this very moment engaged in carrying into effect a portion of a very comprehensive plan which had been under consideration for a great many years. The appointment of a commission would not hasten but rather retard the progress of the improvement. If everybody's project were to be discussed all advance would be checked for some time. But this was not the main ground on which he relied for asking the House to reject the motion. There was really nothing for the commission to inquire into that was worth the attention of a body so formally constituted. There was only one public building which had been erected by Parliamentary grants during the last twenty years—the Record-office in Chancery-lane—though several had been enlarged. He was happy to say that that building was in a very good condition, and there was very little to inquire into about it. The condition of the buildings rented for the public service was also very good. The other point on which it was proposed to direct an inquiry was, whether, by adopting a more comprehensive plan of building, greater public convenience, economy, and unity of design might not be attained. On this point he might observe that the present plan which the Government was in part carrying out was a comprehensive one, and had originated from the inquiries of twenty or thirty years. As early as 1832 plans were proposed for a grand building in Downing-street, and these plans were laid before a committee. In 1839 a committee on the subject made some very useful suggestions, namely, that the Foreign and Colonial offices, which then occupied private houses, should be rebuilt and form part of the general plan for the occupation of the whole unoccupied space between St. James's-park and the Thames. That recommendation was the foundation of the plan which was now being carried out. In 1854, Mr. Pennefather prepared a plan for that purpose. In 1855 a bill was introduced into Parliament. In 1856 there was a committee, and in the present year, 1862, the first stone was to be laid of a building which had been for so many years discussed. The scheme for a comprehensive building had been fully considered. In 1856 the Chief Commissioner of Works, now Lord Llanover, invited all the architects of the world to compete as to the best way of laying out the large plot of land between St. James's-park and the Thames. The first prize was awarded to a French architect, and that was the very plan upon which the Government was now proceeding. If the House of Commons should, on a future occasion, vote the requisite funds for the purpose, the plan, of which the buildings about to be erected formed a part, could be carried out as a harmonious whole. The Foreign-office would not stand alone. The ground on which it was to be erected was a quadrangle, and it was intended that each corner should be occupied, the whole space to include the India-office, the Colonial-office, and the Pay-office, as well as the Foreign-office. There would be plenty of room for all, for after the Foreign and India-offices had been erected there would still be 70,000 square feet of ground; and when the Law Courts were removed from Westminster Hall 30,000 feet more would be at the disposal of the public. This would give a total of 110,000 square feet. It seemed to be necessary, for the purposes of the navy, that the Admiralty should be removed from Somerset House to Whitehall, which would give additional room there; it consequently appeared to him to be an extravagant proposal to ask Parliament for any fresh land. Besides, there were already public works in contemplation and in progress in the metropolis that would occasion an outlay of probably over £4,000,000. The plans now acted upon were comprehensive, and it was in his own office considered essential that all new public buildings should be erected in contiguity with each other. The scheme of Sir Richard Bromley involved the taking down of all the present offices, many of which were in every way excellent ones, and the cost of carrying it out would be enormous. It was not at all likely to be acted upon. The course he proposed to take with regard to the Admiralty-office was simply to enlarge it. The allegation that the War-office now occupied eleven houses was correct, but they were all accessible to each other, and were convenient if not handsome, and no complaint had been made by the War-office authorities. As to the Record Office, it was as perfect a building as any one could desire, and the Master of the Rolls did not complain that the building was too full. Indeed, he had invited the sending to him of the State papers, for which room had been required. If additional room was necessary, the present building could be enlarged, for it was only a portion of the building intended to be erected, and when the Chancellor of the Exchequer should be prepared with the money it would be extended. Moreover, the Victoria Tower contained sixty-four fireproof rooms designed for records. As to its being an economical arrangement to erect new offices instead of retaining those now in use, he could not agree. The sum paid in rents was, in fact, £26,000; but only £11,000 of this was for offices occupied by Government departments, the rest being expended upon the National Portrait Gallery, the Museum of Geology, the Patriotic Fund, the Law Courts, and the War Department, which there was no necessity to concentrate in one locality. There were also the Seamen's Registry, the Stationery Office, and others, which could not advantageously be included in one building. On the ground of

mere economy, he maintained that the present system was the most preferable. The rent of the houses now occupied by the Foreign-office was £2,000 a year. Suppose the new building, with the ground, to be of the value of £300,000, and 5 per cent. was taken for the building and 4 per cent. for the site, that would give an annual value of £14,000. It was rather questionable, besides, whether it would be right to throw upon the present generation the whole charge of erecting these offices, which would do very well to be put up ten or even twenty years hence. The course which the Government proposed to take would, he believed, prove to be both advantageous and satisfactory, and that the buildings to be erected would prove worthy of a great city. He quite agreed in the opinion that it was desirable to have large and comprehensive plans, but thought it to be essential that they should be reasonable. He believed that the issuing of a commission would retard rather than facilitate matters, and not contribute to the desired result.

Lord J. MANNERS, however, was not disposed to treat this motion as one of economy on the one hand, or of expense on the other, but to regard it simply as a proposal for inquiry. He was at a loss to perceive how the right hon. gentleman could oppose the motion on the ground that it would affect the legitimate action of his own office. He said that a commission was unnecessary, because he was carrying out a large and comprehensive plan. That observation was alarming, and he (Lord J. Manners) should very much like to know what this great and comprehensive plan was, before they rejected the motion. The right hon. gentleman had also referred to the concentration of the law courts, and that was a delicate subject to speak about. He (Lord J. Manners) was under the impression that the House of Commons had rejected the scheme by which the money was to be found; but from what had been said, it appeared to be the opinion of the Government that the vote of the House of Commons meant nothing, and that the plan was to go forward. That was a very important fact to come out incidentally in a debate of this sort; but, whether the Government should disregard or set aside the vote of the House of Commons, there was no argument urged against the issuing of a commission of inquiry respecting the expediency of concentrating the public offices.

The CHANCELLOR of the EXCHEQUER said that he was one of those who had expressed great dissatisfaction in that House with respect to the history of the erection of important public buildings, the insufficiency of the modes of control, and the want of the securities of unity, expedition, and economy in those great undertakings. As he understood the motion, it was brought forward much more as an inarticulate expression of dissatisfaction than with reference to any definite form of remedy. As an expression of dissatisfaction he could sympathise with the motion, but he trusted the existence of dissatisfaction would not induce the House to adopt precipitately a motion of that kind without being satisfied themselves that they could find a remedy. As far as he was aware, the department of Public Works—he did not speak of it at the present moment in contrast with what it was in former times—was conducted with as much energy, ability, and discretion, under ordinary circumstances, as the other departments of the Government; but, at the same time, it must be admitted that it was subject to the faults that were incidental to the whole of the system. He thought the history of the erection of the Houses of Parliament was in some degree a special case. There were jealousies entertained, and evils which they could not trace to the root in the administration of any particular office. When they looked back to the history of public buildings for the last twenty years, they must see that their course had been unsatisfactory. Let them take, for example, the National Gallery. He thought the Parliamentary discussion of the question began with a committee; from a committee the question was referred to a commission; from a commission it was referred back to a committee; and then there was another commission. Not less than three or four different judgments were delivered on the site of the National Gallery. He confessed his belief that this question was entirely beyond the scope of any commission. He believed that by appointing a commission to deal with the matter they would be only tempting that commission to make vast recommendations, involving enormous public expenditure, with the almost certain issue of their recommendations remaining simply a dead letter. If the House had in view a particular question lying within certain bounds, such as the consolidation of the law courts, it might be wise to refer such a question to the consideration of a commission; but, in this case, the commission would be appointed, not to consider a definite scheme, but to consider, instead of the House of Commons and of the Government, upon what principle and by what methods a certain department of the State is to be conducted. The appointment of the commission would make a sinecure of the office of his right hon. friend (Mr. Cowper), who, until it had reported, might, if he could obtain leave of absence, travel abroad and improve his mind. The Government had made up their minds on this question, and were prepared to make certain proposals. The question of the law courts had made some progress in the opinions which had been elicited. Government would soon bring under the consideration of the House plans affecting two public buildings, and involving questions of great public interest; one would relate to the enlargement and arrangement of the Museum building of Kensington, and the other to the transfer of a large portion of the British Museum to that part of the town. Then there was the Foreign-office question, which he presumed had got out of the range of such a commission; but the question of the consolidation of the Admiralty, the National Gallery, and the disposal of the site of Burlington House, must remain in suspense for some years, for years it must be before a commission could report upon those entangled and complicated questions. The executive Government must take upon itself the management of this question, and submit its plans to the judgment of the House; and no doubt these questions would receive from the executive the consideration they deserved, and we should by degrees attain to a better system. It would be impossible for the commission to discharge satisfactorily the duties to be imposed upon it; and its appointment would interpose practical obstacles of a most serious nature to many practical plans of great consequence and importance, which were for the public convenience and advantage, and with respect to which the House of Commons would be called upon to give its judgment. On these grounds he hoped the House would not be disposed to agree to the motion.

The House then divided with the result before mentioned.

BATH.—The theatre at this place, erected in 1803, from a design by G. Dance, at a cost, it is said, of £25,000, was totally destroyed by fire on Good Friday.

ART-UNION OF LONDON.

THE annual general meeting of the subscribers to the Art Union was held on Tuesday last in the Adelphi Theatre, to receive the report of the Council, and for the distribution of prizes. The chair was taken by Lord MONTAGUE. The following is the report of the Council:—

The subscription of the Art-Union of London for the present year—the twenty-sixth of its establishment—"to promote the knowledge and love of the fine arts and their general advancement," amounts to the sum of £9,861 15s. The amount subscribed since its foundation is £289,028. But for the great commercial stagnation in many provincial towns, as asserted by our local honorary secretaries, the disturbance of our relationships with America, and some pressing claims on public sympathy, the subscriptions for the year would have been larger. The engraving distributed to all the subscribers, from Mr. F. Goodall's picture, "Raising the Maypole," has been received with very general favour, as well by the subscribers as by the public press of the country.

It will be remembered that the Council offered a premium of 100 guineas for the best series of designs in outline illustrative of "The Idylls of the King," and awarded it to a set by Mr. Priolo. These designs have been engraved by the artist, and, formed into a volume, will be presented to each subscriber of the ensuing year. Of these illustrations, six are appropriated to the patient loving "Enid," Enid, with the—

— meek blue eyes,

four to evil "Vivien" and witless Merlin; four to,—

— Elaine the fair, Elaine the lowly,—

— Elaine the lily maid of Astolat;

and two to sorrowing Guinevere. They give form to all the characters in the story of the "Blanchette King" Arthur and "his Table Round;"—a story through which the poet says to us in words the world will not willingly let die:—

— "O parblind race of miserable men,

How many among us at this very hour

Do forge a life-long trouble for ourselves;

By taking true for false, or false for true;

Here, thro' the feeble twilight of this world

Groping, how many, until we pass and reach

That other, where we see us as we are seen."

In addition to this volume of illustrations, every subscriber will receive, for each guinea paid, an engraving commenced by Mr. Shenton, and completed by Mr. C. H. Jeans, from the charming little picture by Mr. Dicksee, called "A Labour of Love."

Mr. E. Radclyffe has been commissioned to execute for the Association a volume of etchings from the works of the late David Cox, an artist whose drawings are most rightly estimated by those best qualified to judge of works of art. The etchings convey very satisfactorily the largeness, vigour, and other characteristics of the master. A certain number of the volumes will form part of the present distribution.

In accordance with a statement in their last report, the Council offered a certain number of premiums for drawings and models by pupils of the schools in connection with the Government Science and Art Department. The Council urged especially in their prospectus the importance of the study of the human and animal forms. Fifty works were submitted in response, and these were exhibited with the prizes of the year in the galleries of the Society of British Artists. Professor Donaldson, Professor Bell, Professor Westmacott, Mr. Troughton, and the hon. secs., were appointed a committee to examine them, and they reported with great regret that the expectations of the Council had not been realised, and that in too many instances the efforts were feeble. Some few, however, of the designs submitted, were very good, and the Council awarded £10 to Mr. M. R. Elden, of the Stoke School of Art, for a majolica plate, showing much boldness of conception and freedom of handling; £5 each to Mr. A. J. Elwes, of the School of Art, South Kensington, and Miss C. Phillott, of the Female School of Art, Queen-square, for drawings of animals from life; and £5 to Mr. Frederick Jenks, of the Birmingham School of Art, for a design for a dish. Mr. Elden's design for a majolica plate is being carried out by Messrs. Wedgwood. The result will form part of the distribution of a future year.

The gentlemen appointed to examine these works said in their report,—"Your committee having had in view the original purpose for which the Art Union was established, viz., 'to promote the knowledge and love of the fine arts, and their general advancement in the British empire, by a wide diffusion of the works of native artists, and to elevate art and encourage its professors by creating an increased demand for their works and an improved taste on the part of the public.'"

The Committee have called to mind the numerous efforts which the Council have made during a period of twenty-five years to fulfil its mission. In various departments of the fine arts their aim has been to create a love and taste for their study and production, uninfluenced by any personal motive, whether of rivalry, reputation, or profit. The attention of the Council has long been directed to one branch of their duties as specially worthy of consideration—namely, the application of the principles of high art to objects of common use or ornament in which all classes may take pleasure. The collections in the British Museum, not to speak of those of Naples, Rome, Paris, and Germany, show how intimately high art may be allied with the commonest purposes of life, and how intention, thought, and grace may be embodied, so as to give general pleasure and produce refinement.

There is no reason why our manufactures may not arrive at the same excellence, in an artistic point of view, as is shown in older works. Is not the whole sphere of nature as open to us as to the ancients, demanding to be studied with equally high aspirations and with clear comprehensions? Is our national history to be read in vain? Are our poets, our traditions, to be overlooked? Why should not these be brought into play, and made to keep alive in our minds an admiration and reverence for excellence and beauty, by being transferred to the art-productions of our manufacturers? This, however, is not to be effected by puny efforts, but by high aims, and by constant laborious study; by a careful avoidance of meretricious ornament, and a disregard of the praise of the ignorant, whose conceptions of excellence do not go beyond the most commonplace and inferior representations of nature and art.

The superiority of the French in many branches has made itself felt, not only in composition, form, and execution, but in lowness of price; and thus their productions have been of great material benefit to them, even in a commercial point of view. It has long been the desire of the Art-Union to contribute to the formation in this country of a class of art-manufactures of the highest character. With all the mechanical contrivances so abundant in Great Britain, the feeling for the beautiful ought to keep pace with the progress of science. But although much has been done during late years, yet very much is still wanting to enable us to equal the works of the past schools of Italy, and the past and present schools of our neighbours. There is still a wide field open, as witness the vast difference in the various types of Italian, French, and German taste.

Looking further back, ancient pottery has a dignity and importance scarcely to be overstated. The vases of the Greeks and Etruscans, beautifully simple and perfect in form, are, moreover, inexhaustible storehouses of illustrations of the mythology, literature, thoughts, and customs of those nations. Even the Roman lamps afford many remarkable and valuable illustrations of the history, manners, and doings of the people amongst whom they were made. The brooches, book-covers, and metalwork of the Middle Ages; the drinking-glasses and ewers of an old Venetian; the carved bellows and painted plates of a Florentine dame,—exhibit an amount of invention, grace, and skill, that makes them objects of delight for succeeding centuries, valued beyond price, and carefully treasured.

If the common things of to-day were beautiful, as they might be; if the eyes of the multitude were schooled as to excellence of form, harmony of colour, and fitness for purpose, they would not tolerate a public statue that was imperfect; they would give no praise to pictures without thought and good intention,—to daubs incongruous and crude.

In connection with these views as to common things, views often urged by the Council, Mr. John Leighton has designed for the association a commemorative tazza, or card-dish, to be executed in porcelain. It includes a head of the lamented Prince Consort in the centre, with three groups around it, representing the Prince distributing rewards to students in art, science, and literature. Seraphs bear tablets with views of the first Exhibition building, the Palace of Westminster, and of Osborne. The arms of England, Ireland;

and Scotland, and quotations from some of the Prince's speeches, are also introduced. The design is being carried out by Mr. Copeland, and examples will be allotted to-day. It is right to say that these works are not costly.

Mention having been made of his Royal Highness the late Prince Consort, the Council cannot refrain from joining in the general expression of unfeigned lament for the loss the nation, as well as our revered Queen, has sustained. The Prince had devoted much of his time and great ability to the advancement of the arts in this country, especially in connection with manufactures, and will be held in grateful memory by the nation to the latest ages. The people are seeking to erect a worthy monument in his honour. We may humbly express a hope that this will be made an aid in the advancement of the arts he loved so well, and a noble record of the position they have at this time attained amongst us. The Queen has more and more endeared herself to her loving people by those utterances with reference to her great bereavement which have reached them.

To diversify the objects for prizes the Council have commissioned Mr. E. W. Wyon and Mr. Robert Jefferson to execute two bas-reliefs from Milton, which will be produced in fettle ivory, and distributed. It was sought to make the characteristic of one of these *Grace*, and of the other *Power*; carrying which out, Mr. Wyon has illustrated the lines,—

"Now the bright morning Star, day's harbinger,
Comes dancing from the East, and brings with her
The flowery May, who from her green lap throws
The yellow cowslip and the pale primrose."

while Mr. Jefferson has embodied the lines,—

"Him the Almighty power
Hurled headlong flaming from the ethereal sky,
With hideous ruin and combustion down to bottomless perdition."

Paradise Lost, l. 45.

In addition to these, bronzes of "Caractacus," by Mr. Foley, R.A., will be distributed. Silver medals, by Mr. Wiener, commemorative of the late Sir Charles Barry, R.A., will also form part of the distribution. Other medals are in preparation, in continuation of our series.

It may be useful to reiterate that arrangements are made by which various works prepared for the society may be obtained by subscribers in lieu of prints, if desired, by extra payment.

Vacancies in the Council have been made by the retirement of the Rev. E. Coleridge, T. A. Hallett, Esq., and M. Milnes, Esq.; Mr. Jas. Hogwood has been elected hon. solicitor.

The following is a statement of receipts and disbursements:—

Total amount received	£9,864 15
Expended for printing, advertising, salaries, &c., including reserve of 24 per cent.	2,840 19
Engraving, printing, and paper of the plate "Raising the Maypole"	3,757 6
For the purchase of prizes of all descriptions	3,266 10
	£9,864 15

The reserve fund has reached the sum of £10,591.

The sum of £3,266 10s. has been set apart for prizes, for works to be selected by the prizeholders themselves:—

30 works at £10 each, 22 works at £15 each, 17 works at £20 each, 12 works at £25 each, 6 works at £35 each, 6 works at £40 each, 4 works at £50 each, 2 works at £100 each, 1 work at £200; and 4 bronzes: "Caractacus;" 30 silver medals of Sir C. Barry; 15 pairs of bas-reliefs in fettle ivory; 60 commemorative tazas; 300 sets of etchings after David Cox; 200 porcelain busts of "Apollo;" making in all 709 prizes.

The Council desire to make widely known that the original marble by Mr. Calder Marshall, R.A., "The Dancing Girl Reposing," which was the result of a competition proposed by the Association some years ago, and now valued at the sum of £700., will be the chief prize, and a noble one, in the distribution of 1863. The statue is at present part of the International Exhibition, together with a stand displaying the various bronzes, parian statues, medals, and works in iron, that have been issued by the Association. The wonderful Exposition of the Works of Art and Industry of all Nations, which was but a proposition at the date of our last report, is now a reality, and within a few hours will be opened for examination. In respect of art it may be safely assumed that it will far excel any collection ever before presented to the world. The comparative youth of the British school, not more than a hundred years old, commencing with Hogarth and Reynolds, and including Gainsborough, Lawrence, Hilton, Wilkie, Ety, and Turner, will be obvious.

In the province of art manufacture we shall see how far we have benefited by the lessons of 1851, and the operations of our schools of art throughout the country, and find a fresh point of departure,—fresh excellencies and successes to emulate. These are battles in which all may be victors. That England may not only "hold her own" in the contest, but continue to labour earnestly and wisely in the course that insures success, must be the wish of every lover of his country.

As somewhat in connection with these national interchanges of thoughts and processes, your Council would here refer to an invitation which they received at the close of last year from the city of Antwerp to attend, by representatives, an Artistic Congress there to be held. Professor Donaldson, Edmund Antrobus, Esq., and one of the hon. secretaries, were so good as to undertake the office. The fêtes and sitting occupied nearly a week; 700 artists from Germany, France, England, and elsewhere, received princely hospitality during the whole time. Not simply the corporation and the artists of Antwerp, but the whole population participated in offering homage to the arts. Houses were thrown open, corporate entertainments given, and abroad was seen suspended,—"Welcome all to Rubens' land." Not welcome to Antwerp, but to the land of the remarkable artist whose genius has given Antwerp glory.

Much is required to make the truly great painter. Such, therefore, come but seldom. Their works teach, delight, and mould succeeding generations; and they themselves deserve some share of the honour with which they endow their country,—

"Great is the glory, for the strife is hard."

Every artist must exercise an influence on his age. The question, shall that influence be good or bad, rests with himself, but is materially affected by the tastes of the day and the artistic condition of the public. It has been justly urged that the masses should not regulate art, but art the masses. Nevertheless, we know well how one reacts upon the other. To make the masses lovers of art and judges of art is our especial province. The elevation of the mind should be the principal aim of the arts. Painting should give us pictures that let us into the life of things; join the seen with the unseen; feed with lofty thoughts:—

"Subservient still to moral purposes,
Auxiliary to divine."—Wordsworth, "Excursion."

And sculpture "supply," as Bacon says, "the natural imperfection of things," which seems to him, upon the whole, "the object and intention of all the arts." To obtain artists capable of producing such works, and to lead them to do so, we must have an instructed public to demand and appreciate them. Any expenditure in this direction of education is a wise one, and we may feel assured that whatever aid we give to the fine arts, the fine arts will return to the country. They contribute to elevate as well as to enrich a state.

On the motion of Professor WESTMACOTT, seconded by Mr. HURLSTONE, the report was adopted.

A vote of thanks to the hon. secretaries, Mr. Godwin and Mr. Pocock, having been proposed by Professor DONALDSON,

Mr. HERSEE moved, as an addition, that the sum of £300 be set apart for testimonials to the hon. secretaries.

After some discussion, at the suggestion of the CHAIRMAN, Mr. Hersee's proposal was referred to a committee of subscribers.

The drawing for prizes was then proceeded with.

HOUSE OF COMMONS.

NEW FOREIGN OFFICE.

ON the vote of £15,000 for the new Foreign-office, on Monday, Mr. Ayrton inquired whether the estimate of £200,000 for this work would be the total sum required; whether that estimate was the result of careful calculation or a mere guess; and whether it was intended to strictly adhere to the design selected, so as to avoid all extra charges?—Colonel French hoped that the stone to be used would not be such as had been used in the construction of the Houses of Parliament, and inquired what steps had been taken to provide durable stone?—Mr. Cowper said that the sum of £200,000 was Mr. Scott's estimate, and that gentleman was now engaged in preparing the working drawings to be submitted to the contractors. Of course the House would only be asked for the contract sum. Whatever that was he had resolved that it should not be exceeded. No option would be given to the architect to make alterations as the work proceeded. The design was that exhibited last year, which met with general favour. Regarding the stone to be used, he thought the report of the commission that examined the stone of the Houses of Parliament showed that it would not be wise to use that description of stone; and it was intended to employ Portland stone, such as that of which St. Paul's Cathedral was built.—Sir M. Peto said if the First Commissioner would guarantee that the stone should be of the description used in the erection of St. Paul's there would be nothing to complain of. But it should be known that there were two very different sorts of stone in the island of Portland. The quarries from which the stone was taken to build St. Paul's had scarcely ever been worked since, for the simple reason that the stone was so hard; in fact, some of the stone actually quarried for St. Paul's had not been used for any other purpose on this account. The architects of Sir Christopher Wren's time were good geologists. He was glad to hear from the First Commissioner that it was resolved not to deviate from the original plan of the work, for, if this was not done, there would be endless changes involving large expenses.—Mr. Locke wished to know upon what data Mr. Scott went in returning the estimate for the Foreign-office at £200,000. Unless the architect knew the material which would be used in the building his estimate must be of little worth. To work a hard stone like Portland must be very expensive, and this item must enter into any correct estimate.—Colonel French said the Foreign-office was not to be built in an ornamental style, and consequently the stones used in it would not require an undue amount of labour so as to increase the expense.—Sir M. Peto hoped that a hard stone would be selected. In that case the first expense would be the least.—Lord R. Montagu said it appeared from the estimates that, though the sum of £30,000 had been voted last year, and the sum of £20,000 the year before, for this very Foreign-office, only £3,100 had been expended of the entire amount. For what object, then, could the additional sum be required?—Mr. Cowper explained that the vote was divided into two parts; one for the foundation of the building, the other for the remainder of the contract. The contract for the foundation had been taken out, and the workmen, to secure a good basis, were obliged to sink 18 feet below the surface, the entire sum now voted, in addition to the balances of the preceding years, would be required before the 31st day of March next; but, if any then remained, as it could not be appropriated to other purposes, it would be available for the general purposes of the country. It was impossible to state the precise sum which would be required in any year for this work. He had consulted the report of the commissioners appointed to examine the several kinds of stone; he found that the hardest class of Portland was not the whitest, and, consequently, was not favoured by the public approval. There were some kinds of sandstone so hard that the labour of working them would considerably increase the expense of the building.

The vote was agreed to.

NATIONAL GALLERY.

It being proposed that a sum of £1,705 should be voted for increasing the accommodation for painting and sculpture in the National Gallery in Trafalgar-square, being an excess upon the amount of £15,000 voted for the service in the year ending 31st March, 1861.—Mr. Slaney suggested that on a single day in each week a very small sum should be charged for admission, thereby rendering the company on that day more select; and Mr. Cowper said that the specification could not be made after the original vote was passed, and for the purpose of getting the work done in sufficient time it was necessary to have the work done by day-work, and even to work by candlelight. Improvements were suggested and made as the work went on, and satisfactory reasons could be given in detail why the actual cost of the work had exceeded the estimate. They did not know that the excess had occurred until after the work was completed.

The vote was agreed to.

OFFICE OF WORKS AND PUBLIC BUILDINGS.

On the vote of £30,839 for the office of Works and Public Buildings.—Sir M. Peto inquired to what extent the Chief Commissioner of Works considered himself responsible for this expenditure?—Mr. Cowper said he considered himself responsible for the expenditure incurred upon all public buildings.—Mr. White drew attention to the fact that Messrs. Baxter, Rose, and Co., solicitors of the Carlton Club, were employed by the Board of Works in connection with the measure for the Thames embankment. Would the right hon. gentleman explain why he was driven to the necessity of seeking the assistance of those gentlemen?—Mr. Locke remarked that Messrs. Baxter, Rose, and Co., had the confidence of the railway interest, and their object was not to carry out an embankment similar to that which was now proposed, but to make a railway from Westminster-bridge to Queenhithe. He did think the employment of those gentlemen was very extraordinary, and he would advise the right hon. gentleman to see that his own object, and not theirs, was carried out.—The vote was then agreed to.

WESTMINSTER BRIDGE.

On the vote of £2,500 for the completion of the new bridge at Westminster.—Mr. Williams complained that any further sum should be required, seeing that £173,000 had already been granted, and that a large balance remained unexpended.—Mr. Cowper explained that the vote now asked for was to defray the charges of stairs and other works not included in the original estimate, and said that when all demands of the leaseholders had been satisfied, the balances now in hand would be reduced to nil.—Mr. Ayrton asked whether it was intended to carry out the recommendation of the committee, and provide a subway under the bridge, for the purpose of giving easy access to the Houses of Parliament?—

Mr. Cowper said that a tunnel under the existing road was not part of the original plan, and he feared it could not now be made without considerable expense. Perhaps the object could be accomplished when the embankment should be constructed.—Mr. Locke believed that there was at present an entrance from the bridge which could easily be rendered available. There would be no difficulty in constructing the necessary passage.—Mr. Cowper said that the sum he now asked for would be spent, or was intended to be spent, within the financial year. There was an older sum in hand for buying up property at the approaches to the bridge, which would probably not be spent in the year, owing to the delay of legal negotiations, but it would be very undesirable for the Government to be deprived of the power of completing any purchase whenever it could be effected.—The vote was agreed to; and also a vote of £1,230 for watering the approaches to Westminster-bridge.

FORTIFICATIONS AT PLYMOUTH.

Mr. Bentinck asked the Secretary of State for War whether it was true that an artificial island was being constructed in Plymouth Sound by sinking stones, for the purpose of building on it a fort similar to those which were under construction at Spithead?—Sir G. C. Lewis said it was intended to construct a fort behind the breakwater—not upon it, as originally intended. The foundation was not in the nature of a breakwater consisting of stones thrown down, but the walls would be nearly perpendicular, and the plan of the fort was in accordance with the recommendation of the Defence Commission.

NATIONAL GALLERY, DUBLIN.

A sum of £2,500 was voted, in continuation of former grants, towards the erection of a national gallery for painting, sculpture, and the fine arts, and for the reception of Archbishop March's public library in Dublin.

LIGHTHOUSES.

On the vote of £11,994 for lighthouses abroad, Mr. Childers wanted to know who was responsible for this expenditure, because there appeared to have been a great waste of money in attempting to erect a lighthouse on the Basses Rocks. He wished to know where that lighthouse had been erected on these dangerous rocks?—Mr. M. Gibson said that the Board of Trade was responsible. He was afraid that the lighthouse attempted to be erected on the Basses Rocks and the money expended thereon were gone to the bottom of the sea. After a very considerable expenditure of money the idea of erecting a fixed lighthouse on the Basses Rocks was altogether abandoned. He hoped that the unfortunate endeavour to erect a fixed structure upon these rocks would be a warning to engineers not to attempt so hazardous an experiment in future.—The vote was agreed to.

HOLYHEAD HARBOUR WORKS.

It was proposed that a sum of £101,221 should be voted on account of the new packet harbour and harbour of refuge at Holyhead, and of Portpatrick Harbour.—Mr. Williams complained of the enormous expense of this harbour. It had cost £2,000,000, and he wished to be informed whether the present estimate would be sufficient to complete the works.—Mr. Peel said the question of the pier accommodation had caused much embarrassment to the Government, who had proceeded with it as rapidly as they could. He gave a short history of the measures taken in connection with it, and said the temporary pier was preferred to the stone pier. The Government had come to the conclusion that it was not desirable to proceed with the stone pier, and they had turned their attention to what was necessary for the postal and passenger service of Ireland. Improvements were being made in the temporary pier, which would afford the necessary accommodation. It would be strengthened. This would cost £10,000. A sum of £20,000 would be required to strengthen a curve of which the railway complained.—Sir M. Peto said this was one of the numerous cases in which estimates had been enormously exceeded. There was no guarantee that this work would be completed even now within the present estimate. There ought to be a Minister responsible to the House for these estimates.—Mr. Bentinck said the error that had been committed in regard to the Holyhead harbour was that which occurred in nine cases out of ten—namely, that from false considerations of economy a sum of money was voted which was inadequate for the purpose, the result of this mistimed economy being that a large sum of money was expended in making a bad harbour, upon which it had been necessary to expend a much larger sum in order to render it to a certain extent useful. The harbour as originally constructed was perfectly inaccessible to large vessels, and, therefore, wholly useless except to small coasting vessels. They had spent above a million of money in constructing a harbour of refuge at Holyhead, and they were still using the old harbour for which the new harbour was meant to be a substitute. Except as a harbour of refuge, to be used by those who chose to do so, the harbour upon which all this money had been expended was altogether ignored. He asked whether it was a satisfactory or a rational state of things that having many years ago condemned the old Holyhead harbour as inadequate for the purpose either of a harbour of refuge or of postal communication, they should now spend large sums of money upon it at the same time that they continued to spend money on the new harbour?—This vote was agreed to.

The following votes were also agreed to: £96,342 for public buildings in Ireland; £1,250 for temporary Foreign-office; £10,000 for Industrial Museum, Edinburgh; £903 for the enlargement, repair, and alteration of King's College and Marischal College, Aberdeen, and a vote of £5,000 for the construction of a new Record-office in Dublin.

MONUMENT TO THE LATE DR. ALEXANDER AT PRESTONPANS.—A statue is to be erected at Prestonpans to the memory of the late Dr. Alexander. The site is on the south side of the main street, towards the east end of the town. The pedestal will be reached by two flights of steps, and surrounded by a gravelled plateau, so that a near view of the statue on all sides may be accessible. The statue is by Mr. Brodie, of Edinburgh. It is eight feet in height. The figure is represented attired in the full uniform appertaining to the rank which the deceased held as Director-General of the Medical Department of the British army, with the left hand supported on the hilt of the sword, and the right resting on the waist-belt. A military cloak hangs over the shoulders of the statue.

Correspondence.

LIGHTHOUSES ON THE GOODWIN SANDS.

SIR,—I will thank you to allow me to direct public attention to the great necessity for building two lighthouses on the Goodwin Sands. I propose to sink a shaft of wrought iron, 90 feet in diameter, through the sands into the solid chalk, braced and cased with masonry, secured by vertical wrought-iron bars from the base to above high water mark, each course bonded with plates, the bars passing through the latter to insure sound construction; I also propose to put down four iron screw-piles, 8 feet in diameter, with booms attached, secured to the lighthouses with iron chains inside, and above high-water mark. I would have a steam-engine, gasworks, and a refuge for shipwrecked mariners and others. In case of a ship getting on the sand, a hall and rope may be projected from the lighthouse across the vessel, and a hawser once secured the vessel might be drawn with ease by the engine, acting as a stationary tug. I have no hesitation in stating that the whole work may be performed for £5,000, and completed within twelve months.

JOHN NOTT, C.E.

TENDERS.

DWELLING HOUSE, STREATHAM.

For house and stables at Streatham. For F. Fuller, Esq. Mr. R. W. Drew, M.A., architect. Quantities supplied by Mr. J. A. Bunker.

Williamson	£3,200	Carter	£2,945
Pritchard and Sheldon	2,970	Turner and Sons	2,797
Dowds	2,965	Trollope and Sons	2,743
Child and Son	2,897	Deacon	2,670

PARSONAGE, BERKS.

For the erection of a Parsonage House, at Fawley, near Wantage, in the County of Berks. Messrs. John Money and Son, architects, Northbrook-street, Newbury.

George Adey and Son	£1,359	John Haines	£1,195 10
Robert Messenger	1,250		

CHURCH, CHATHAM.

For the erease of a church in the Maidstone-road, Chatham. Mr. Henry Clutton, architect, 9, New Burlington-street, W. Quantities by Mr. Crocker.

Sutton and Vaughan	£2,169	Ansell	£1,810
Stump	1,847	Spicer	1,695
Naylar	1,837		

CHAPEL, LIVERPOOL.

For new congregational chapel, West Derby-road, Liverpool. Messrs. Penlton and Woodman, architects, Reading.

Tomkinson	£4,033	Mollin	£3,618
Yates	3,845	Bateman	3,525
Nicholson and Co.	3,839	Burroughs	3,407
Haigh	3,795	Nelson (accepted)	3,362
Roberts	3,730		

ROADMAKING, GRIMSBY.

For the formation of about a mile and a quarter of road and drainage in the East Marsh. J. Barry

J. Barry	£4,268 17 9	A. Huston	£3,376 10 0
T. Enderby	3,640 0 0	J. Waller (accepted)	3,350 10 0

DWELLING-HOUSE, PENGE.

For a house at Penge, Surrey, for James Covell, Esq. Mr. Henry Jarvis, architect.

Bottom and Co.	£963	Glenn	£930
Crawley	915	Tarrant	789
Marland and Son	880	Kent	775
Pugh and Wallis	875		

WAREHOUSES, LONDON.

For new warehouses for Messrs. Marzeth and Co. Messrs. Whales and Sparks, architects.

Jacobs	£8,495	Haeh	£7,997
Brown and Robinson	8,310	Corder	7,960
Ryder	8,200	Hill, Keddell and Robinson	7,748
Axford	8,150	Myers	7,438

COMPETITIONS OPEN.

CATHEDRAL.

CORK.—Architects are invited to furnish designs for the erection of the cathedral of St. Finbar, Cork, at a cost not exceeding £15,000. A premium of £100 will be given for the best and most approved plan, and £50 for the second. Plans and designs to be sent to the hon. secretaries, [Ven. the Archdeacon of Cork, Rev. J. N. Woodroffe, or T. M. Osborne, Esq. Cork, not later than the 1st August next. Further information and a plan of the site may be obtained on application to W. C. Bennett, Esq., notary public and Chapter clerk, 15, South-mall, Cork.

SCHOOLS, &c.

LANCSHIRE.—For the erection of the proposed new schools, vestries, &c., Rawtenstall, Lancashire. Plans, &c., with Thomas Simpson, architect, Nottingham, to May 10th, inclusive; and at Rawtenstall, on application to Thos. Hoyle Whitehead, Esq., on and after the 12th May. Printed quantities will be supplied on application to the architect. Tenders to be delivered to Thos. Hoyle Whitehead, Esq., Rawtenstall, on or before the 21st of May.

CEMETERY WORKS.

CHELTENHAM.—The Burial Board for the borough of Cheltenham require plans, estimates, and general specifications, for the laying out, constructing roads and footpaths, erecting buildings on, fencing in and planting, certain lands purchased by them for a cemetery, the superficial area of which is eighteen acres. The designs must include a ground-plan, showing the sites of the different buildings required, the courses of the carriage-roads and walks, the courses, also, of the drains, the division of the land into the several sectional burial-places, and the subdivision of such places into plots for burial. The plan, also, should show the manner proposed for the ornamental planting of the land. Should the intentions of the designers as to the laying out of the land under it necessary, sections of the earthwork required, and formation of the ground surface as proposed to be made, should be provided, and such other details and suggestions as the competitors may think necessary to illustrate and make clear their designs. Plans, elevations, and sections must be provided for two chapels, dead-house, lodge, gates, and walls at entrances, &c. Specifications must accompany the plans, describing the manner of construction, the class and substance of material in the several buildings, and estimates of their several costs. Plans, specifications, and estimates of the number of laying out and planting the site, of forming and making the roads and footpaths, and of the character and cost of fencing the site, to be also provided. Plans, &c., may be either for forming and finishing the roads and footpaths, laying out and planting the site, or for fencing the site, or for the chapels and other buildings before mentioned, and the entrance-walls and gates, or the whole of the works, may be combined in the plans, &c., of any competitor; but the Board reserve the right of selection at their discretion from the plans, &c., submitted to them. A premium of forty guineas will be given for the best designs, specifications, and estimates for the whole of the works sent in; and a premium of twenty guineas for the second-best designs, specifications, and estimates for the whole of the works. Should designs, &c., be selected for part of the

works only, a fair arrangement as to the premium will be made by the Board, with the successful competitors. The plans, &c., selected to become the property of the Board. The plans, &c., are to be distinguished by a mark or motto, and accompanying them a sealed envelope, having the same mark or motto outside, and within the name and address of the designer, and the terms on which he will superintend and supply his professional services in execution of the works. Plans and particulars of the land may be had of Mr. Henry Dangford, borough surveyor. The plans and other documents to be sent to G. E. Williams, clerk to the Board, Public Offices, Cheltenham, on or before the 29th May.

LIBRARY AND READING ROOMS.

BIRMINGHAM.—The Free Libraries' Committee of the Council of the Borough require plans, sections, specifications, and estimates for the erection of a free reference library and reading-rooms, lending-library and news-room, and gallery of art, upon the piece of vacant land adjoining the Midland Institute Building, with an elevation uniform with the said building. Intending competitors are requested to send in their plans, specifications, and estimates, under cover to Thomas Standbridge, town clerk, Town clerk's office, Temple-street, endorsed "Plans for Free Reference Library Buildings," on or before the 16th June. Particulars of the accommodation required, and of the conditions of competition, together with a lithographed plan of the site, may be obtained on application.

MEMORIAL.

GLOUCESTER.—The committee appointed to carry out the Hooper Memorial, at Gloucester, invite sculptors to submit models of designs for the figure of Bishop Hooper, which is intended to be placed under the canopy of the monument just erected in the churchyard of St. Mary de Lode, Gloucester. The models or statuettes to be carved in stone, and to be one-quarter the real height (7 feet). The author of the best design, approved by the committee, will be appointed to execute the full-sized figure; and the sum of ten guineas will be awarded for the second-best design.

DRAINAGE.

KINGSTON.—The Corporation of the borough of Kingston-upon-Thames invite engineers and others to submit plans, specifications, and estimates for a thorough and complete system of drainage of the borough, and offer a premium of £100 for the plan approved, retaining the liberty to carry it out or not. The plan approved to become the property of the corporation. The system of drainage to blend, as far as practicable, with existing drains, to plans and descriptions of which are at the Town Clerk's office. The plans, Clerk's office also the commission for carrying out the works, to be sent to the Town &c., stating on or before the 17th day of May next.

CONTRACTS OPEN.

PUBLIC BUILDINGS.

EDINBURGH.—For the erection of a large building in Edinburgh. Plans, &c., with Mr. Henderson, architect, 7, Hill-street, Edinburgh. Tenders to 15th of May.

LIMERICK.—For the erection of new offices and board-room, in White Horse-street, Commercial-road East, for the District Board of Works. Drawings, &c., upon application to Mr. Charles Dunch, architect, White Horse-street, Commercial-road East. Tenders are to be delivered at the offices of the Board not later than 12 o'clock on the 5th day of May.

DARLINGTON.—For the erection of Darlington new market, town offices, and clock tower, Plans, &c., with George Dickinson, C.E., Surveyor to the Board, Central-buildings, Darlington, or at the office of Mr. Alfred Waterhouse, architect, Mount-street, Manchester. Tenders to Mr. Dickinson, endorsed "Tender for Darlington Market, &c." and addressed to the Chairman of the Darlington Local Board of Health, on or before 5th May.

WIGTOWN.—For the erection of a new court-house at Wigtown, Wigtownshire, with public offices, &c., attached. Plans, &c., with James McLean, clerk of supply, Wigtown, to whom written tenders on or before 12th May.

CHESTER.—For the proposed extension of Chester corn market, with entrances to St. Werburgh-street, and the city-walls, together with several shops and warehouses connected therewith. A copy of the plans and specification may be seen at the corn market, upon application to Mr. Chivas, 28, Eastgate-street, Chester, and further particulars from Thomas M. Penson, architect, The Bars House. Tenders to be sent in on or before 12th May, by 12 noon, addressed to Mr. Chivas, Eastgate-street, and endorsed "Tender for intended Corn Market."

MARKET BUILDINGS.

BATH.—For the erection of iron roofs, masonry, and other works involved in the reconstruction of the Bath provision markets. Plans, &c., on application to Hicks and Isaac, architects, 13, Northgate-street, Bath, from May 3. Sealed tenders to the Town Clerk, Guildhall, Bath, for the separate trades, endorsed, "Tenders for the reconstruction of Markets," by the 15th of May.

BANK.

LINCOLNSHIRE.—For the erection of a bank and manager's house at Spalling, for the Stamford, Spalding, and Boston Banking Company. Particulars from Mr. William Eve, surveyor, 3, Union-court, Old Broad-street, E.C. Tenders on or before the 17th May.

CHURCHES.

YORK.—For the erection of a new Catholic church and presbytery, to be built in the City of York. Plans, &c., at the Very Rev. Joseph Rinder's, Precentor's office, Petergate, York; or at the office of the architect, George Goldie, Esq., 34, Gloucester-place, Portman-square, London, from May 5 until May 14, on which day sealed tenders are to be forwarded to the Very Rev. Joseph Rinder, Precentor's-office, York. Bills of Quantities may be obtained on application to Thomas Wilson, Esq., No. 7, Hanover-square, Sheffield.

HILGAY.—For the repair and restoration of Hilgay parish church. Plans, &c., with the Rev. W. J. Parkes, on the spot.

SOMERSET.—For repairing and reseating the parish church of Carhampton, near Dunster, Somerset. Specifications, &c., at Carhampton, on application to the Rev. John Tripp, or the Church wardens, to May 12th inclusive. Tenders to be sent in addressed to the architect, Mr. C. E. Giles, 52, Westbourne-park-road, Bayswater, London, W., on or before the 12th May.

RAGGED SCHOOLS.

MARYLEBONE.—For the erection of ragged schools in Ogle-mews, St. Marylebone. Drawings, &c., with Mr. W. P. Griffith, architect, 16, Guilford-street, Russell-square, to May 6th. Tenders to be delivered, under seal, to P. Pitts, Esq., hon. sec., 54, Foley-street, on or before May 7.

BRIDGE.

GATEHOUSE.—For building a new bridge over the river Fleet, at Castrament, in the parish of Girthon. Plans, &c., with Mr. Ewart, Bank of Scotland, Gatehouse, who will receive offers till the 20th May.

DWELLING HOUSES.

HANSTANTON.—For the erection of three first-class, four second-class, and four third-class houses, at Hanstanton, for the Hanstanton Building Association (Limited), according to plans, &c., prepared by Mr. Butterfield. Plans, &c., at the office of Mr. J. S. Valentine, C.E., 17, Parliament-street, Westminster; or with Partridge and Edwards, Solicitors to the Association, King's Lynn; or copies will be forwarded on prepayment of 2s. Tenders, stating a separate amount for each class of house, marked "Tenders for Building at Hanstanton," to be delivered to the solicitors on or before the 14th May.

FARM BUILDINGS.

DEVON.—For the performance of alterations and erections at Hayes Farm, in the parish of Poltimore, in the county of Devon, in the occupation of Mr. Joseph Gould, for the Right Honourable Lord Poltimore. Plan, &c., with Mr. Robert Hews, Poltimore, of whom any further particulars may be obtained. Sealed tenders (to be marked as such), on or before the 14th May, directed to Messrs. Riccard and Son, Southmolton, Devon.

HEREFORD.—For erecting a farmhouse at Pontplinna, near Furnaston, Herefordshire. Plans with T. Nicholson, architect, Hereford, to whom tenders by May 14.

LANCASHIRE.—For the erection of several farm buildings, at Ince Blundell and Fearnby Plans, &c., with Mr. Mawden, foreman of joiners, Ince Blundell. Tenders to be sent before the 10th May, to Mr. T. F. Fisher, steward, Ince Blundell.

OIL MILLS.

GLOUCESTER.—For the proposed building, to be erected at Gloucester, for Messrs. T. N. Foster and Co. Plans at the Spread Eagle Hotel, Gloucester, to the 9th May inclusive. Tenders to be addressed to Messrs. T. N. Foster and Co., Evesham, on the 13th May, endorsed "Tender for New Oil Mill."

SHOPS, &c.

RADNOR.—For erecting three shops, houses, and offices, at Knighton, Radnorshire. Plans, &c., with Mr. Grenhouse, Norton, near Prestegyn; particulars from T. Nicholson, architect, Hereford; to whom tenders by May 7.

STABLING.

SALTBURN.—For the erection of stabling to the Zetland Hotel, at Saltburn-by-the-Sea. Plans, &c., at the offices of the Stockton and Darlington Railway Company, in Darlington, to May 7th. Tenders to be delivered not later than the Thursday following, addressed to the secretary, and endorsed "Tender for Stabling."

POLICE STATIONS.

SIDMOUTH.—For the erection of a police station, &c., at Sidmouth, Devonshire. Plans, &c., with Henry Ford, Clerk of the Peace, Castle of Exeter, and at the office of Messrs. Radford and Williams, Clerks to the Justices, Sidmouth. Sealed tenders, endorsed "Tender for Sidmouth Police Station," to be sent to Mr. Ford, on or before the 3rd June.

RAILWAY WORK.

INVERNESS AND PERTH JUNCTION RAILWAY.—For the construction of the two remaining sections of the line, viz.:—The Kingussie contract, extending from Kinross Post-office to the south side of the river Spey, measuring about 13 miles or thereby, comprising about nineteen small bridges and culverts, with a timber viaduct about the Spey. The excavations and embankments consist of about 470,000 cubic yards. The Dalwhinnie contract extends from the south side of the Spey to the boundary of the county of Perth, measuring 15 miles or thereby, and consists of thirty-two small bridges and culverts, and about 430,000 cubic yards excavations and embankments. The rails, chairs, sleepers, spikes, fish-plates, and bolts will be supplied by the Railway Company. Drawings, &c., at the office of Joseph Mitchell, Esq., C.E., Inverness, from whom, or from the assistant-engineer on the line, duplicate schedules may be obtained, at £2 2s. each. The line is staked out at distances of every 100 feet, according to the working sections. The deepest cuttings are also pitted to ascertain the nature of the materials in the excavations. An assistant-engineer will be at the County Marsh, near Dalnacardoch, on the 20th May, at 10 o'clock a.m., to accompany the contractors over the Dalwhinnie contract; and at Spey-bridge, near Kingussie, on the 21st, to go over the Kingussie contract, and to point out the works and sites of the bridges. The draft contract proposed to be entered into will be seen with the assistant-engineer, or at Mr. Mitchell's office. Sealed tenders, addressed to the secretary, and marked "Tender for Inverness and Perth Junction Railway Works," "Dalwhinnie" or "Kingussie Contract," as the case may be, must be lodged at his office, on the 28th May, at 4 o'clock p.m.

EXETER.—For the erection of a roof for the new station at Exeter, of the Bristol and Exeter Railway, having an area of about 500 squares. Drawings, &c., at the Engineer's Office, Bristol Terminus, to the 5th of May. Sealed tenders to be addressed to the Secretary, A. Moore, Esq., on or before the 6th May.

ENAMELLED SLATE FOR THE EMPRESS OF THE FRENCH.—Her Majesty the Empress Eugenie having commanded samples of enamelled slate to be submitted to her, Mr. Magnus, of the Pimlico Slate Works, the inventor and patentee, whose beautiful productions obtained so great a share of admiration at the London and Paris Expositions, has been summoned to Paris, and has received the personal commands of Her Majesty to line the walls of two dining-rooms with enamelled slate to represent various choice and costly marbles. The architrave and other mouldings, chimney-pieces, and pilasters, are all to be of the same material.

THE NEW BRITISH CHURCH, NAPLES.—The committee appointed to build the Protestant Church, at Naples, invited twelve architects to supply them with designs. They have adopted that furnished by Messrs. Thomas Smith and Son, 33, Bloomsbury-square, and which are to be forthwith carried into execution under their superintendence. The design is in the English Gothic style of the geometric period, and consists of nave, north and south aisles, transepts, and chancel, with hexagonal apse; there is also an organ-gallery over the vestry, and a carriage porch at the west end. Accommodation is provided for 700 adults on the ground floor. These architects are now building the church at Nice, which is nearly finished.

STEAM FIRE ENGINES.—The superintendent of the London Fire Engine Establishment has made a report to the committee upon the performance of the new steam fire-engine, constructed by Shand and Mason, and tried last week at Hodges' distillery, Lambeth. He reports that the engine started with steam of 60 lb. pressure in 14½ minutes from lighting the fire, cold water being used. The hose was led to the base of Mr. Hodges' chimney, which is 140 ft. high, and notwithstanding the great force of the wind at the time, a 1½ inch jet reached an elevation of some 30 ft. above the chimney, being a total height of 170 ft. The same jet was projected 190 feet in a horizontal direction, but as Captain Shaw measured solid water, and not spray, at least 15 per cent. ought to be added to this for the farthest point reached by the water, giving a total of 220 feet. In like manner when two jets, each 1 inch in diameter, were worked at the same time, the distance reached by the water was 150 feet. In this engine, and in the other supplied by the same makers to the London Fire Brigade about eighteen months since, the water in the boilers is kept at boiling point by a jet of gas, and 50 lb. pressure is raised in five minutes from lighting the fire.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

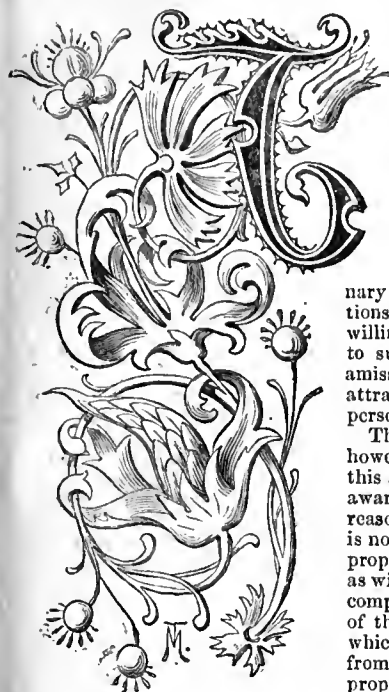
WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

H. H.—Send name and request shall be complied with.
T. R. O.—Thanks for suggestion. Other subjects are being prepared.
S. B.—Desired with thanks.
R. R.—There should be no difficulty in the matter; try again.
S. W. G.—Impossible to comply with such requests.
R. M. W.—J. F. P.—We cannot give the names of any writers engaged on the BUILDING NEWS.

Q. D.—Shall be engraved.
D. B.—Thanks; a notice had appeared previously.
Z. A.—Look for a reply next week.
J.—We cannot say when.
F. H. F.—Quite willing to accept, and pay for, good things.
A. SENSCHER.—Thanks.
S. M. N.—Below our mark.
BIRMINGHAM FREE LIBRARY.—A reply to Mr. E. M. Barry's letter on this subject came to hand too late for insertion this week.
F. W.—A. K. K.—V.—B. K. R.—P. C. K.—Next week.

* * * All communications to be addressed to the Editor of THE BUILDING NEWS, 20, Old Broad-street, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 18 to 21, Old Broad-street.
Advertisements are received up to six o'clock on Thursdays.

THE BIRMINGHAM AND MIDLAND INSTITUTE.



THE Town Council of Birmingham have lately issued an advertisement inviting plans to be submitted in competition for the erection of a Free Library and Reading Rooms "upon vacant ground adjoining the Midland Institute building, with an elevation uniform with the said building." This advertisement, except that no premiums are offered, is not so widely different from the ordinary run of architectural competitions as to induce any architect willing to compete for public works to suspect that there could be much amiss, and it will probably have attracted notice from a good many persons.

The real facts of the case are not, however, those which the reader of this advertisement, if not otherwise aware of what had occurred, might reasonably believe them to be. This is not really a new building which is proposed to be built in a style such as will correspond with some already completed and successful ornament of the town; nor is the case one in which the Town Council are free from previous engagements. The proposed erection is in reality the completion of the Midland Institute

—a hitherto unfinished building; and the Town Council have only had recourse to competition, after first employing and then setting aside one of the first architects of the day.

The letter of Mr. Edward Barry, which will be found in our number for the 25th April, in which he gives a brief, clear, and temperate statement of his view of the case, will no doubt have been read by most, if not all those who have seen the advertisement.

We this day publish a letter, forwarded to us by the Town Clerk of Birmingham, containing a counter statement, intended to serve as a defence of the Town Council in what they are doing. Beyond the somewhat broad statement contained in the first paragraph—which is not, however, couched in quite the most vigorous and briefest terms which might be used to express the same thing as the words "not in accordance with the facts"—this letter is, like Mr. Barry's, temperate and well expressed; but it fails to alter, to any great extent, the impression which we had derived from Mr. Barry's statement.

It may be remembered by some that the Midland Institute formed the subject of a limited competition some seven years ago, and that Mr. Barry's design, which received a great deal of praise at the time, was adopted, and, as far as funds were forthcoming, was carried out. The means in hand, however, only sufficed for the erection of one half the building, and it is the completion of this unfinished building, and not the addition of something different, which is now contemplated.

Further, the Birmingham Town Council, having this completion in view, applied in the first instance, and very properly, to Mr. Barry, and we learn from his letter that he prepared, at their request, a full set of drawings and specifications, and that tenders were procured; these, however, were higher than had been anticipated. Mr. Barry states that upon this he "at once offered to forego all claim for remuneration for what he had done, and to prepare new plans to suit the financial exigencies of the case;" and that the Committee at once accepted the first part of his offer, but that the only answer to the other part was that invitation by public advertisement to architects to submit plans to which we have before referred.

The answer to those parts of this statement which tell against the Town Council does not seriously alter them; it merely informs us of a considerable amount of negotiation, such as must naturally have occurred under the circumstances, and it puts us in possession of the amounts of the preliminary estimate and subsequent tenders. The discrepancy between these amounts is very serious, and shows that Mr. Barry was in a position in which he could not honourably do less than what he proposed to do—namely, to prepare new plans without charging for the old ones. It must, however, be most distinctly understood that this offer is not equivalent to a resignation of the appointment as architect to the building, and that the only way in which that appointment could fairly, and, we believe, legally, be taken out of Mr. Barry's hands would be, notwithstanding such offer, by paying him in full for all he had done in his capacity of architect. It appears, however, from the Birmingham letter, that a small sum has been paid to Mr. Barry, but this must clearly have been for preliminary sets of sketches, and not for the working plans and specifications and services in procuring tenders; for the amount paid to

Mr. Barry was £45, whereas the lowest sum that, in accordance with professional usage, he could have charged for the complete set would be 2½ per cent. upon his own estimate, or £262 10s. Yet this payment of £45 is put forward more than once, and dwelt upon as a strong point in the letter.

The gist of the matter appears to be this: after all the trouble had been gone through, and reductions had been proposed, and their feasibility investigated by Mr. Barry, he was able to see his way to bringing down the cost to £12,250 and no lower, and was prepared to make plans, &c., on that basis; but the Town Council determined if Mr. Barry would not say that the building could be erected for the amount which he had at the outset mentioned—namely, £10,500—that they would find some one else who would say so. This could, of course, only honourably and legally be done in one of two ways,—either Mr. Barry must resign his appointment, or he must be paid off. It is clear, however, that no resignation has ever been sent in, and equally clear that no payment, beyond the £45 referred to already, has been made; yet Mr. Barry is now told, not that his services will be dispensed with, in the only manner in which that could be properly done, namely, by his being paid for all that he has already done, but that he is not to be paid, and the matter is to be put into other hands. Of the injustice of such a course there can be, we think, little room for doubt. We are glad, however, that Mr. Barry has carried the matter further, and has procured legal advice; and still more so that the opinion furnished him is "that the proposed competition cannot legally be carried out."

Appended to Mr. Barry's letter is a statement signed by five of the architects engaged on the original competition, from which we learn that a distinct engagement was entered into with the competitors, that the successful one should be employed as architect of the building, which engagement forms part, but, probably, not the strongest part, of Mr. Barry's claim upon the Town Council. The principal part of it is the very simple fact that Mr. Barry having been appointed architect, an attempt is being made to displace him in a way which will probably prove unsuccessful, but which shows clearly that the persons making that attempt are not aware of the legal and equitable position held by an architect when once appointed, or, if aware of it, have not thought proper to act up to their knowledge.

We think that this flagrant but not solitary instance of the way in which architects are treated should not be lost upon the profession. It must have been suspected that certain members of it—and those not the most obscure or the most needy—possess a readiness to secure business under any circumstances and at any cost which cannot be called by a milder name than rapacity, or else surely no committee would venture to treat a prominent man with gross injustice, and then expect that members of his own profession, experienced enough to be fit to carry out a large public work, will flock in a shoal to offer themselves as ready to submit to the same sort of treatment for the sake of possibly earning a few hundreds. Is there any ground for this? Have the architectural body uniformly shown themselves high-minded, disinterested, and willing to forego personal advantage when they could not honourably obtain it; or have there been instances of sharp practice, of unfairly taking work out of a brother architect's hands, of charging half commission to the client and making it up by getting five or ten per cent. from the builder, of submitting to humiliating conditions sooner than be excluded from a competition, and of interest, disclosing of mottoes, and underhand work when once admitted? We are not going to pretend to answer these questions, but we do say that if such things exist, and if those who do them are not stigmatised by the profession at large, but remain identified with its most respectable members in the public estimation, we have possibly in that fact a clue to the estimate formed of the architects of England by the Town Council of Birmingham.

We have very lately taken occasion to urge the desirableness of some such alliance between the architectural societies of England as was proposed last year, and we consider that this insult to the profession, and some others of the same class which we could name (including among them certain things which have risen out of the Great Exhibition building controversy), are so many arguments which speak loudly in favour of all proposals that will tend to promote a better understanding among architects.

The conduct of competitions offers but too many inducements to underhand dealing, and we earnestly hope that gentlemen who are so circumstanced as to be induced often to enter upon these struggles will be on their guard to maintain a high standing. It is on some accounts to be regretted that every invitation which appears should call forth so much painfully expended labour and thought, where only one, or at most two or three, can be rewarded by even a recognition of their merit; not that competitions may not advantageously employ the leisure of young men who are entering on practice, and who do not find their time fully occupied, but because the exhibition of this large amount of gratuitously expended labour cannot but tend to "cheapen" the profession in the eyes of the public, and cause it to be supposed that men who will do so much for a remuneration neither certain nor even very probable, will submit to mean usage, poor pay, and disrespect when they are actually employed professionally. Such a supposition is, as a general rule, totally wide of the truth, but still architects cannot be too careful to show that if they are prodigal of their efforts in those instances where honourable rivalry or the possibility of obtaining professional distinction, and consequently emolument, call for exertion, they know what is demanded of them by considerations of self-respect, and of the respect due to others.

To return to the question immediately before us, we have expressed

our hope that the architects of England will take a lesson from it. Among other matters, we hope that they will see how desirable it is to prepare preliminary estimates with great care and accuracy, for there can be no doubt that had the preliminary estimates in this case been a more just one, this unseemly squabble would never have occurred. We hope that Town Councils and other public bodies of the sort will get a lesson also. It would gratify us to be able to hope that the architects of England themselves will give this lesson, and that the Town Council of Birmingham will find themselves without a single plan sent in in answer to their advertisement. And it appears clear that if plans are sent, and the competition is decided, the matter will not thereby be set at rest. The Town Council state that they have not acted "unadvisedly"—a figure of speech meant to imply their having taken legal advice—probably that of their town clerk; their architect also states plainly that he has placed the matter in the hands of his solicitor. Between a wealthy and angry town council and a prominent and energetic architect, the "successful competitor" will probably find his position none of the pleasantest, and he may consider himself lucky if he escapes with something short of a chancery suit.

Is the premium and the profit worth the risk and the obloquy? We think not.

ROYAL ACADEMY.

THE great feature of the present exhibition is the quantity of excellent and painstaking work. We say "work," because the productions of the year are more remarkable for labour, patient study, and very minute manipulation, than for novelty, the grand, or even the imaginative. As the first men will not rise, they must not be annoyed or surprised if the second-rate men, by sheer care and industry, rise to their level; the only difference seems to be that the latter do not rise at all times—indeed, very rarely—to the same good place in the exhibition. Several of the Academicians are, as it has been said, "conspicuous by their absence;" but, to our mind, the absentees are not conspicuously missed, especially as many of the good men who have exhibited seem to have expected an influx of foreigners in consequence of the International Exhibition; and although they have not displayed any novelty of subject nor increased poetry in treatment, have evidently done their best in the old and beaten path. In some instances there has been a change for the better as regards colour and execution, but the ideal of English art remains in the same place it left last year, and in the place it has occupied during many years past. Besides the old subjects by old favourites being better executed and rendered more perfect as works of art, we have a change in what has been generally known as pre-Raffaellite art. The walls of the Royal Academy show scarcely one instance of that abuse of the term, and even Mr. Millais seems to have been "drubbed" by critics into common-sense, and is endeavouring to paint like other people, and, it would appear, has resolved to take his stand undistinguished by eccentricity, and allow his works to rest on their artistic merits; but, although we do not wish to triumph over a fallen foe, we must remark, if that be his determination, it comes rather late, and unfairly; because, by playing the mountebank in painting for a few years, he has stepped over the heads of men superior to himself when he returns to legitimate art, and, from his previous experiments on the ignorance of the public, obtains more general notice for his pictures than their real merits would have obtained for them had he not been known as the leader of a certain section, and been raised into notoriety by the absurd praise and the bitter censure which that position has obtained for him. Besides which, we feel quite certain that had it not been for the shillings the controversy brought to the coffers of the Royal Academy, he never would have been honoured by being made an Associate of that respectable body,—the shilling is the great moving power with the Council of the Royal Academy, and they seem to think that the degradation of art is well purchased at the price.

As the natural course of our remarks, after several visits to the great shilling show in Trafalgar-square, has led us to single out Mr. Millais, we will commence our brief notice for the present with his three pictures. His grand picture, as we suppose he intends it to be considered, is a rather rational successor to several puerile absurdities which have occupied the same place from the same pencil on former occasions. Now, if this picture was not sought out by the public on account of the painter's name, we are quite certain that it would attract very little notice, for the truth is, with the exception of one face, it is not a bit better than a picture of the same kind by Charles Landseer, and in many parts, as regards execution, it is a great deal worse. It is entitled "The Ransom." The story is not well told, for every critic gives a different version of it, so we will not make "confusion worse confounded" by making the attempt. "Trust Me" is his next picture of importance, judging by the hanging. This is so indefinitely made out as regards the artist's intentions, that numerous versions have been given also of this; but, thinking them all wrong, we will offer an explanation of our own. A gentleman prepared for the hunting field holds a leathern pouch in his hand, his daughter or his wife holds a letter behind her, not inclined to put it into the pouch. The fact, as we conceive it, is, that she thinks he will be so engrossed in riding to cover that he will forget to call at the post-office and leave the letters, therefore she is afraid to trust him. The only merit of this picture is that Mr. Millais has been so well drubbed—there is no other term for what we mean—for painting metallic dresses instead of silk ones, as the copper dress of the lady in the hidden royalist (we forget the exact title), and the tin dress in the "Black Brunswicker," that at last he has condescended to paint a dark silk dress as it should be painted; but, as for the rest of the

picture, it is remarkably feeble. We may observe, by the way, that the fine old English gentleman in the hunting suit is very like Sir Francis Burdett of former days, and, if we mistake not, the lady bears a strong resemblance to Mrs. Millais, recently Mrs. Ruskin. The third picture is the parable of "The Woman seeking for a Piece of Money." There is nothing in this but a candle-light effect, and it would be hardly worth further notice if it were not necessary to make one remark. It has been said that the pretended truth laboured for by the pre-Raffaellites would lead to the power of expressing the real truth in the broad manner of the old English school; but here we have the test: the candlestick held by the woman is painted with one or two smears of the pencil, but at no distance does it give the character of the thing intended; therefore the practice of painting detail according to the pre-Raffaellite system does not lead to masterly execution. Why? Because their illusions are obtained by "fumbling," and do not result in characteristic expression of a general truth that at a proper distance becomes the truth itself.

It is hardly worth the space we have devoted to this part of the exhibition, but, as there are no other pre-Raffaellite productions of importance, we conclude from this marked change in Mr. Millais that it is admitted the bubble has burst, and we therefore remind buyers of that style of art that from the first we warned them, no matter what price they gave for such pictures, they would live to turn the faces of them to the wall, and that their heirs would consign them to the lumber-room.

Now to a more pleasing occupation, mainly in praise of honest and legitimate art. Upon the whole, we think "The Tosseller," by the veteran Mulready, is the finest picture in the exhibition. It is a study of a negro selling a toy to a child that turns away from him in alarm; but the great beauty of the picture is the facility and breadth with which the black man is painted, and the patient expression of endurance of infantine disgust and alarm to which, no doubt, he is well accustomed. The mother and child are well drawn and painted, but the lights on them are so much enforced as to give them the disagreeable appearance of being in a violent state of perspiration. The landscapes by Creswick are very fine this year. "The Half-way House" is, we think, the finest of them all. Mr. Bottomly has had a share in this production, and therefore we conclude that the team of horses comes from his pencil. Besides the subdued tone which pervades this picture—no positive colour appearing to mar the general effect—we admire the fine semicircular line of composition commencing with the man seated on the right reading the newspaper, carried along the dray and the horses, terminating in the old woman trudging along the path in the middle distance. The foreground line, including the dray and horses, is supported by a dog running after geese, which again compose with the aforesaid old woman. Across, and just above the horizon, is a fine bank of clouds, giving fulness to the foreground subject, and confining the eye to the interesting part of the picture. The white local colour of the geese is very properly made the principal light in the scene, contrasting with the breadth of half-tint in which the rest of the foreground is subdued. All Mr. Stanfield's pictures are excellent this year, as are those by Mr. Roberts. The Linnels, without abandoning those striking effects in which they delight, are sobered down to more rational combinations and better focussed results.

Mr. Ansell has quitted Spain and returned to the Highlands. In his picture of "Dunstaffnage Castle in the Distance" he gets a great breadth of light from the dust thrown up by a flock of sheep travelling away from the spectator, but we think he has disturbed that effect by bringing the group on the bridge so distinctly off from the sky background. All the boulders, bridge, and other accessories in the foreground, display a sameness of touch, which implies more the expedition of the manufacturer than the true feeling for art. His other picture is entitled "Excelsior," and gives him an opportunity of painting some Mount St. Bernard dogs, which he has done with less hardness of touch than usual, and the monks are also broadly and vigorously painted. Several of Mr. Witherington's landscapes, we think, are less mannered than many we have seen for some years past. "How Bianco Capello sought to poison her Brother-in-Law the Cardinal de Medici," from the history of Florence. There is much ease and composure in the face of the Cardinal, who has detected the attempt to poison him; the husband is also well executed; but the lady herself, in her facial expression, would do much better for a phantasmagoria than a picture; it is this exaggeration and some mediaval feeling that spoils what would otherwise be a good picture. It is by V. C. Prinsep. Mr. Leighton has made an advance this year, which fully justifies the favourable notice he obtained in the last exhibition. He has a very elegant subject in the great room, entitled "Odalisque." It is an Oriental female leaning over a swan. The figure is very graceful, and the swan's feathers, which are erected, are, as examples of facile and certain execution, masterpieces of art. The only objection we have to the arrangement is, that the figure being in a white dress, the dark shawl round her waist combining with the fan made of peacock's feathers divides the subject, including the swan, into two equal masses of white, which effect is rather enforced than relieved by the dark trees in the background, because they add two dark masses to the two light masses—certainly not a very artistic arrangement; but, setting aside that technical oversight, it is a picture of ideality and sentiment. One of his other pictures, "The Star of Bethlehem," although elegantly composed we do not like so well. The lines of the drapery are too like the flat and edgy folds of the Elgin marbles having sameness in touch, although well varied in form. Near to this hangs a fine picture by Hubert; it is an extensive landscape and cornfield. The title of it is "To labour is to pray." If the artist has not thrown over it a "dim religious light," he has given it an atmosphere of that softness and balmy repose calculated to excite the religious sentiment. It repre-

sents the monks of St. Bernard's Abbey, Leicestershire, gathering the harvest of 1861; the boys in the adjoining field are from the reformatory, under the care of these religious people. It is, although minute in treatment for its size, painted with the feeling of an artist.

We must congratulate Mr. Cope on an improvement in his style of pencilling, for he has quitted that coarse, unfeeling, and absurd method which belonged to the pre-Raffaellite fashion, for a much more legitimate style; although, in minor parts, it may be still discovered in his picture of "Two Mothers," furnishing as many compartments in one frame. The subject is, or the subjects are, taken from Proverbs xxxi. The one mother "looketh well to the ways of her household. Her children arise up and call her blessed." The other is a contrast to this; she is idle, handsome, and vain, caring little for her children, while the occupant of the other division of the picture is teaching her children, while she herself plies her needle. The colouring is more rich and harmonious than we have seen by this artist for some years. We must not forget a fine picture by Frederic Goodall. To think that such a painter as this should have no more academic distinction after his name than Mr. Millais has! They may be both Associates of the Royal Academy, but they cannot associate as artists in the interchange of painter-like thoughts and feelings—supposing them equally honest in their practice. However, the title of Mr. Goodall's picture is "The Return of a Pilgrim from Mecca; his Purse-bearer distributing Alms to the Poor of Cairo." The subject is taken from Lane's Modern Egyptians. The picture has scarcely a sufficient general interest to induce an appreciation of the labour, skill, and character which it represents; but the effect is fine, the execution admirable, and the story, such as it is, well told.

There is some merit due to the Academicians for having accepted and hung a picture by Mr. Lawless, of "The Widow Hogarth selling her Husband's Engravings." It is very well painted; but it appears she was, twenty years after his death, totally destitute, and it was not until the King, George III., recommended the Council of the Academy to do something for her that they voted her the liberal allowance of £40 a year. How much does the public know of half their works, and who does not know Hogarth's? See the groups before them at the International Exhibition. What a pity it is that fame so frequently does not come until remuneration is too late. "The Searching for the Will" is a picture, if it had been painted and exhibited when Wilkie's domestic subjects had possession of the town and excited general interest, would have made the fortune of the painter; but, as it is, it scarcely attracts the attention it deserves. It is, however, a very clever composition, and the story is remarkably well told. The cool determination and defiance in the countenance of the scapegrace son, just arrived, standing with his back to the fire, having no other sign of mourning than a piece of crape round his hat. In the centre is a group of relatives and friends, anxiously searching in a chest of papers for the will; from amongst these persons the widow looks at her cool, obdurate, and unfeeling son, and, as a point of composition, connects him with their proceedings. The rest of this excellent picture is filled up with visitors, who by gestures express their doubts and fears of the result. In the same room is a large and well-studied picture representing the painful scene of women, friends, and children, assembled round a pit's mouth after an explosion in the mine below. The incidents here represented are so natural that it would seem greatly, if not entirely, taken from the reality. The title of "Unaccredited Heroes" alludes to the man whose wife is taking leave of him, about to descend to assist the unfortunates underground, and to others who are exerting themselves in various ways. There is a great deal of vigorous and appropriate execution in this work, but the artist has been rather over zealous in painting a little girl seated on the ground playing with some pieces of coal, with which she has blacked her face. It is too serious a subject for excesses of that kind, which tend to produce a comic effect, entirely out of place, and is one of those straining for effect, forcing of ideas, and hatching of puerile conceits, which we have in these columns so frequently and, as we believe, so justly censured. If Mr. Bardwell, the painter of this picture, will keep to the first general idea, and do nothing but support that, he may attain a good position in art.

There are a great many pictures deserving of notice to which we may return, but the sculpture, beyond several good busts, is not so good as last year in important subjects.

LONDON PAINTERS' MEMORIAL.

THE following memorial, unanimously agreed to at a public meeting called by the Amalgamated Association on behalf of the Painters of London, has been sent to the employers of painters in London:—

Your memorialists have long felt the grievance of not being paid the same rate of wages as the skilled workmen in the other branches of the building trade. Whilst admitting he skill required for them to execute their work, we also claim acknowledgment for the skill required so to apply colour for decorative purposes that it will obtain the expression of satisfaction for the whole of the work when completed.

Your memorialists respectfully submit for your consideration the dangers to which we are so often exposed. The unhealthy nature of our trade—the reports of medical men proving we suffer from diseases to which the other branches are not liable, such as colic and paralysis, and the uncertainty of our employment,—is also so well known that it only requires alluding to to be confirmed.

Your memorialists endeavour to obtain a guarantee that all who belong to this society are skilled workmen. They are united in the hope that by just and impartial conduct in all their transactions they will obtain the respect and goodwill of all concerned. They therefore trust that this memorial will meet with that consideration they fully believe it merits, and that the employers of London will grant the boon of paying us the same rate of wages as the other skilled workmen, viz., Five Shillings and Sixpence for our working-day.

By order of the Executive Committee,

WM. CHAMANT, General Secretary.

GOTHIC ART IN THE INTERNATIONAL EXHIBITION.

IN our last number we noticed briefly the Architectural Gallery, and stated how rich is the display of works produced by the most eminent architects for some years past. Many drawings have, of course, been already exhibited at the Academy and in Conduit-street, but we shall all be glad of so excellent an opportunity of reconsidering them and refreshing our recollections. So varied and so great is the number, that it is most embarrassing to know at what point to commence a notice which we propose to carry on, from time to time, in our columns. We could have wished, indeed, to have had our labours simplified by an arrangement of the designs in the two general divisions of Classic and Gothic. Probably, the difficulties of selection were too great, or the time allowed inadequate. We propose, then, to sift for ourselves the one style from the other, and for the moment we take up the Gothic division.

Beginning in the furthest room, we find on tables along the centre several models. Amongst these, conspicuous from its size, is Lincoln Minster (2145), modelled in cork to a quarter scale. This is the production of a labouring man, J. H. Anderton, of Bracebridge, near Lincoln, and has occupied the whole of his leisure since 1851 till within the last few months. The details are stated to be executed "from his mind's eye, without plates, model, or measurement." The early portions were done at his own home, but Mr. Vickers, builder, of Lincoln, allowed Anderton subsequently to work on his premises, in order to be near the edifice. The toil of many years being at length completed, a subscription was got up for Anderton by some of the local gentlemen, and through their aid the model has been forwarded to the Exhibition. Shown with it are some eight or nine old corks of bottles, a file, and three ordinary table knives. This, really, seems an instance of ingenuity sadly misdirected. The same exertion applied to his own calling would have saved the man from the eleemosynary subscription set on foot for him. He has a large family, and nothing to depend on but his own labour, and we cannot help thinking that if he had expended on his proper employment—of which, by the way, we are left in ignorance—half the energy and perseverance here shown, he would have been in a very different position from that which he now holds as the result of ten or eleven years' cutting up of old corks. As a model in such a material we admit that the work is creditably executed. The interior arcades are shown as well as the exterior, with its boundary railing and chapter-house, and the windows are even filled with representations of painted glass. We foresee plainly that this model will be popular, partly from familiarity with the building, and partly because this is the sort of thing that always impresses general visitors. It was an astute person, and one who gauged pretty accurately the public mind, that thought of showing the knives and the corks, which would have been used if they had been required. There is evidently a virtue in the tools employed. We are most of us familiar with the street model of a ship and the sight of the knife that did it all. Some one else thinks it essential to press this point in a model of Christ's Church, Ealing (2141), which (we are kindly informed) is "constructed in Bristol cardboard with a penknife, from perspective drawings by the architect." Curiously enough the modeller is a dentist, and he announces that he gives lessons in the art by appointment.

Salisbury Cathedral (2136) is shown according to the original design, without tower and spire. Mr. J. B. Robinson exhibits a small stone model (2139) of an ugly monument erected to the memory of the Rev. J. G. Pike, founder of the Baptist Missionary Society. Octagon-shaped, the sides having Pointed arches enclosing trefoiled panels, it mounts into a spiral top, and looks like a miniature tower, which has settled down, to the belfry stage, into the two square steps on which it stands.

Turning now to the walls, we find (1872) a frame of four—Mr. W. E. Nesfield's—eleven pencil sketches from France. One of them is the tympanum of the great doorway of Chartres Cathedral. From Mr. Nesfield's former appearances at the Architectural Exhibition we are aware of the enthusiasm which he feels for Mediæval art. His spirited pen-and-ink drawings have been, we believe, hitherto unexecuted designs belonging to the catalogue of "rejected addresses," which train a young architect in the way of patience and of hope deferred. Here (1873) we have the interior of the great hall about to be erected at Combe Abbey, near Coventry, the seat of the Earl of Craven. The mansion, although chiefly erected by Lord Harrington, in the reign of James I., stands on the site of a religious house founded in 1150 for Cistercian monks, and dedicated to the Virgin Mary. This fact is, perhaps, Mr. Nesfield's motive for his treatment of the subject, which fits in with his partiality for the early style. We are shown a thoroughly English hall of Early Pointed character. Enclosed by an arch, springing from short massive nook shafts, is the end window of four lights, each couplet of lancets contained within an arch filled in with a quatrefoil within a circle. The side windows are of two lights. The hall has, on one of its long sides, two fireplaces of the period, wide and open, and sloping upwards. There are shelves at the ends, projected on a single shaft. A passage runs round at the level of the window sills. On the inner wall, across the great end window, is a gallery, formed by small shafts supporting a cornice. The side-tables, cabinets, and chairs, are conceived in the same style. The walls beneath the windows are panelled in oak; above, they show jointed masonry. The roof is of open timber, and framed with double collars, king-posts, and braces. The upper part is very well, but below the curved braces, which are made to terminate in a straight piece above a carved figure, are not so successful. The whole design breathes the ancient spirit, and we look for mailed warriors in place of figures wearing clothes of the modern fashion. All the accessories are carefully drawn, and Mr. Nesfield would give at the end of the hall a painted (or tapestried) representation of the months by female figures, in breezy gar-

ments, bearing products of the various seasons, and whose names are inscribed over their heads.

Mr. Gompertz sends (1875) a good ink drawing of his florid design for a cathedral, all over pinnacles, and crowded with canopies and crockets. Mr. S. J. Nicholl's design (1879), to which the silver medal of the Society for the Encouragement of the Fine Arts was awarded, is shown in two clever pencil sketches of the exterior and interior. The latter has an ugly roof. A sketch of the decoration of this roof, as proposed to be devoted to the lives of SS. Peter and Paul, has all the defects of lanky figures and inaccurate drawing which it is most undesirable to perpetuate, although abundant precedents are to be found in Early English painted glass. The same architect gives (1880) St. Mary's Cemetery, Kensal-green, as first designed and as actually executed. The latter is much sobered down and reduced in size, and retains but one altar instead of four. The tower has given way to a bell-turret, and the western portal of triple arching to a modest side porch. There was no necessity, surely, for such a doubtful feature in the western gable as a circular window cut into quarters by the arms of a large, plain cross. The dedication to the Virgin, and the fact of the building being evidently intended for Roman Catholics' use, would have amply justified a vesica panel enshrining the Holy Mother and Child.

Mr. Irvine, with a far too facile pencil, contributes four studies of architectural and decorative designs (1877). Of these the sketch for a portal is florid German, infected with the vice of interpenetration, and therefore overdone with crockets and panelling. Then there are two Germanised arm-chairs, made solid beneath the seat, and bristling, as to the backs and arms, with carving. If these chairs are intended to be sat in, a rare combination of cushions would be required to make them comfortable. Messrs. Deane and Woodward give several small pen-and-ink sketches (1874), with a plan, of St. Mary's, Tuam, a large and interesting specimen of Irish ecclesiastical edifices.

Messrs. Pritchard and Seddon send a series of photographs, nine of which are devoted to the mansion at Eaton Park, near Stratford-on-Avon, the seat of Evelyn Philip Shirley, Esq., M.P. for South Warwickshire. This is one of the most remarkable buildings yet achieved in Gothic. Every part of the design shows the most careful thought. Somewhat irregular in plan, the entrance front shows a *porte-cochère*, gabled on the three sides over Pointed arches stayed with angle buttresses. Above these arches is a weathered niche containing an angel, who holds a shield with heraldic bearings. Right and left of the entrance is a cloistered corridor leading to the drawing-room and dining-room. The drawing-room portion projects considerably and forms a wing, terminated with a well-proportioned bay window of two stories. The building is Early Pointed in style, and treated most effectively with plain and trefoiled arches, dog-tooth, and other characteristic ornament. The windows throughout are divided by pillars with foliated capitals, and open with sashes. The walls are coursed with stones, irregular in size, and banded at intervals with a darker stone (or marble). All these photographs will repay a careful examination. They were taken before the scaffolding was entirely removed, and in some instances show the masons at work. The whole of the carving is excellently and spiritedly done, and the building generally must have been a real labour of love to all concerned. The cultivated taste of the owner is to be recognised by the introduction of carved panels, and of several coats of arms, prominent amongst which are the two coats borne by the knightly family of Shirley. The more ancient, *Paly of six*, we notice over the garden porch, with the motto, "*Loyal je suis*." Elsewhere is the present Shirley coat (dating anterior to Richard II.), *Paly of six, a quarter ermine*, sometimes impaled with the wives' coats. A horse-shoe, the badge of Ferrers, is freely used as an ornament on the square part over the abacus of the capitals, and as the centre of the cinquefoils which fill up the space formed by the intervening floor. In addition to these photographs there are others of sculptured panels, designed by Mr. H. H. Armistead,* and containing seven subjects illustrative of events in the history of the Shirley family. One of these shows "Sir Thomas Shirley's encounter with the Saracen—(origin of the family crest).†

In this particular instance a certain fitness is discoverable in the employment of a style commemorative of so ancient a family. Indeed, if we are to have Gothic for domestic buildings, this design seems well suited for the purpose. It proves how absolutely necessary it was to discard the mullion, which always found a place in the earlier attempts at treating modern Gothic. A building such as this would have been impossible in the age to which its style is referable, and yet it is a faithful rendering of all those peculiarities of detail, moulding and ornament, which form the union of grace and gravity which distinguish Early English. By the same architects, and also of early style, are Llandaff District Probate Registry Office, St. Kagan's Rectory, Glamorganshire (1900); Llandough schools (1902); and Llandaff schools (1904). For Llandaff Cathedral are shown the pulpit and organ (1901), and sedilia (1903). The latter have four seats, in the canopied heads of which occur the letters A and Q, and the sacred monogram I I I S, with the passion flower and other emblems.

In our notices of the Architectural Exhibition we remarked on the small scale on which Mr. Truefitt appeared. We might have supposed that he was reserving himself for South Kensington. Here, accordingly, we find him in great force, with a gigantic frame (1998) holding an *olla podrida* of works executed in thirteen counties, which are ranged alphabetically, and ingeniously enumerated on a placard in the foreground, to which a

boy is putting the finishing stroke and directing the spectator's attention. We fancy that we remember in Conduit-street, from the same hand, the humorous plan of pasting this important notice over other placards. Now we are able to make out the words "Great Exhibition," and "Octoroon." It would be hopeless to describe within our limits the contents of the picture, and we can only touch on some leading features. Beginning on the extreme left we have a yellow brick house (and shop) at the corner of Burlington-gardens, and next to it the temporary chapel erected in Islington (if we remember rightly). This is shown, in section with the congregation seated. Then we run over the boy before spoken of, and trampling down some flowering plants growing gaily over graves, adorned with headstones and ironwork, we rap at the bank doors of Cunliffe, Brooks, and Co., of Manchester. We recognise the Manchester font and cover, the Bentinck Memorial, with other works, among the structures which rise gradually on either hand up the hilly slope in the background. In the middle distance is an octagonal tower, lit in the belfry stage by single-light circular-headed windows, and covered with a spire which, in about a third of its height, is cut out with two curved brackets filled in with louveres, and from that point becomes square.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE annual meeting of this body was held at the rooms, 9, Conduit-street, Regent-street, on Monday evening, WILLIAM TITE, Esq., M.P., F.R.S., the President, in the chair. At this meeting, after a ballot, the following gentlemen were declared to have been duly elected office-bearers for the ensuing year:—*President*, Mr. William Tite, re-elected; *Vice-Presidents*, Messrs. G. G. Scott, R.A., Arthur Ashpitel, and O. Jones; *Honorary Secretaries* (in room of Messrs. James Bell and T. Hayter Lewis, resigned), Messrs. C. F. Hayward and J. P. Seddon; *Honorary Secretary for Foreign Correspondence*, Mr. F. C. Penrose, re-elected; *Ordinary Members of Council*, Messrs. E. M. Barry, J. Fergusson, R. Kerr, W. Slater, G. E. Street, J. B. Waring, W. Burges, T. Hayter Lewis, Wyatt Papworth, and J. L. Pearson; *Treasurer*, Sir W. R. Farquhar, bart.; *Honorary Solicitor*, Mr. Frederick Ouvry, F.S.A., F.R.S.L. Queen Anne-street, Cavendish-square; *Auditors*, Mr. William White and Mr. William Lightly. Votes of thanks to the office-bearers of the last year were agreed to. The annual report and balance-sheet (which we shall publish hereafter) were read and adopted.

SHOP IN THE STRAND.

THE building, 31, Strand, of which we give an illustration on another page, is Elizabethan, of red brick, with Portland cement dressings, with a frontage to the Strand of 20 feet, and a return in Villiers-street of above 50 feet. The spandrels are filled with military and naval trophies, as expressive of the trade carried on. The building was recently erected by Mr. J. M. Macey, builder, of Milford-lane, under the direction and from the designs of Mr. John Barnett, of Verulam-buildings.

PROFESSOR DONALDSON ON OBELISKS AND MONOLITHS.

ON Tuesday evening, before a numerous audience, Professor DONALDSON delivered a lecture "On the Transport and Erection of Obelisks and other large Monoliths, in Ancient and Modern Times," in the Great Gallery of the Architectural Exhibition, Conduit-street, Regent-street. The chair was occupied by Mr. JAMES FERGUSSON, and the lecture was illustrated by a number of drawings, as well as models of two Egyptian obelisks, carefully prepared by Mr. Bonomi, and a model of the apparatus employed for the removal, from the Seine to its site, of an obelisk presented to the French Government by the late Mehemet Ali, Viceroy of Egypt. Owing to a pressure of matter we have not space this week for the whole of the talented and interesting lecture, which we are unwilling to divide into portions, but in our next shall give it at length.

CONVERSAZIONE OF THE SOCIETY OF ARTS.

THE first of a series of *conversazioni* to be held under the auspices of the Society of Arts during the continuance of the Great International Exhibition, took place on Wednesday evening, at the South Kensington Museum. Notwithstanding the unfavourable state of the weather, there was a very numerous attendance, including a large number of foreigners.

SOCIETY FOR THE ENLARGEMENT, BUILDING, AND REPAIRING OF CHURCHES AND CHAPELS.—At the last monthly meeting of this society grants of money, amounting to £2,290, were made in aid of the following objects:—Building churches at Langton-green, in the parish of Speldhurst, near Tonbridge-wells; St. Paul's, Clerkenwell; St. Paul's, Stratford, Essex; Tor Mohun, near Torquay; and Waterside, in the parish of Chesham, Bucks, rebuilding the churches at Cowbit, near Spalding; Hunstanworth, near Blackland, Durham, and Monkton, near Honiton; enlarging, or otherwise increasing the accommodation in the churches at Charlestown, Manchester; Llandough near Cowbridge; Long Buckby, near Rugby; and Nevern, near Newport Pembroke; and the grants formerly made towards building the church at Byker near Newcastle-upon-Tyne, and towards reseating the churches at Combe St Nicholas, near Chard, Outwell, near Wisbeach, and Tetney, near Grimsby, were increased. The society accepted trust or repairs funds for the churches of St. Paul Broomfields, in the parish of Bradford; Whitley, in the parish of Kelington, Yorkshire; and All Saints' Church, Chardstock, Somerset. It was announced that, since the last meeting, the sum of £1,854 had been received as the legacy of the late Miss Mapletoft, £500 as that of Thomas Barber, Esq., Cheltenham, and £14,530 from John Hine, Esq., of which latter amount one third is to be restricted to the building and enlarging of churches in the county of Devon. Other donations have also been recently received.

* The original drawings for these are to be found among the art-designs for manufactures (2824).—Class xxxviii. a.

† A Saracen's head, couped at the neck, proper, wreathed about the temples, or, and azure.—Burke.

MR. FRITH'S "RAILWAY STATION."

HAVING, in a former number, given a description of the leading parts of this picture, as regards what may be called the story, we propose, as it will doubtless attract a great deal of public attention, to make a few observations on its artistic merits, and the rank it should take in art.

It is not with the intention of being over critical, or for the purpose of raising a dissection, that we call this production a painting and not a picture. That it is a painting no one can deny; but that it is a picture, we, among others, may dispute. A picture, in the strict sense of the word—that is, in an artistic sense—is the representation of an event at a chosen moment by the painter, as momentarily to be perceived at the first glance by the spectator. Now, as there are nearly one hundred persons in the painting of the "Railway Station," all differently occupied, it is clear that, although all their actions, and the events in which they are engaged, could take place at the same moment, it is as clearly impossible that the spectator of either the scene or the painting could or can distinctly perceive them all at a single and a momentary glance. Therefore, we think it right to explain that this work is not a picture but a painting, and to state that it takes a peculiar position in the classification of works of art. It also belongs to a class of art for which we have no convenient nor expressive name. The general success of such productions might suggest the word "popular," which, upon the whole, is, perhaps, preferable to the vague word *genre* used by French critics; for this is not an ordinary subject—never having been painted before—although all the incidents are either of frequent or of occasional occurrence; therefore, as we have in art the accepted term of "still life," probably that of "every-day life" would answer the purpose. There is, we have observed, an inclination to cavil at the choice of subject, and to consider it unworthy of the great amount of labour, taste and skill which have been bestowed upon it. We, however, think that while a painter does not shock the feelings or violate morality, he is at perfect liberty to paint any subject whatsoever that he feels may be made available for pictorial representation. When, therefore, an artist paints that which comes naturally to his ordinary train of thought and within the range of his executive powers, it is almost unnecessary to assume that it will prove to be more successful than if he indulged in subjects far above the highest conception of his mind, and as far beyond the scope of his delineative skill. That the subject of the "Railway Station" is perfectly congenial to Mr. Frith's mind we may safely conclude from his success in its execution, and the similar success which attended his "Ramsgate Sands," and his more recent painting of the "Derby Day." All these paintings have given harmless pleasure, and will continue to do so to thousands for years to come; they are a perfectly legitimate occupation for a talented painter; and as they are painted upon perfectly legitimate principles, we can discover no reasonable ground of complaint against the choice of subject, nor of regret that the genius of the artist has not induced him to starve upon grand historical illustrations, sacred or profane, and to find comfort in public neglect. Much more praiseworthy is it to paint a "Railway Station" in the highest perfection the nature of the subject will admit, than to degrade, if not profane, sacred subjects for the mere purpose of astonishing gaping crowds, and with the sole aim at the exact imitation of archaeological curiosities. Besides which, while the desecration of a religious event may rank in art above one of every-day life, the latter may have a moral advantage of which the former cannot boast. In the two last paintings by Mr. Frith we have warnings for evil-doers; in the "Derby Day" there are the results of gaming and debauchery; and in the "Railway Station," besides some of the affections and sentiments of life, we are shown the haggard and careworn forger, or wily and dangerous swindler, seized at the very moment he thought his escape secure; and we see the consequences of low company and irregular living in the undutiful and unfeeling son enlisted for a soldier, upon whose shoulder his widowed mother weeps. If, therefore, the moral lesson such incidents inculcate be duly appreciated, paintings of this kind really do take a much higher range than when considered merely as objects for public amusement.

With respect to the treatment of such subjects as we have endeavoured to explain, although it is possible all the events represented might take place at the same moment, it is quite impossible that a spectator would perceive them all at that identical moment, either in the reality or on the canvas. As the painting is so much longer than it is high, the upper and lower part of the visual circle would extend far beyond the top and bottom of the frame before the whole subject could be brought within its circumference, the spectator must consequently take his stand too far off to see either distinctly the figures or clearly understand their actions. It induces the necessity of close inspection, and the examination in detail of not only every group but of every figure in each group. Thus, being brought closely to the subject, it is absolutely essential that each object should be perfectly executed, and hence finish and detail, which would be out of place and in bad taste if found in a picture to be seen at a distance and at a single glance, are consistent and unavoidable in a work as extensive as "The Railway Station." That being undoubtedly so, the next question arises as to how that exact representation has been executed; that is to say, whether the objects are painted with so free and perfect a hand that the resemblance is more apparent than the labour which produced it; whether the countenances are sufficiently natural not to show inefficient effort; whether the features have the true expression and probable motion; and whether the figures act, their dresses set and blend with the whole, so as not to stand stiffly from the rest, and not in any instance to remind the spectator of either labour, study, or the lay figure. In all and each of these respects Mr. Frith's "Railway Station" is perfectly satisfactory.

As it is not pretended that unity of impression is the leading characteristic of the composition, but, on the contrary, its adopted principle is detached groups of figures engaged in the expression and manifestation of different feelings and sentiments, each group entirely apart from the others and the bond of union which binds the whole arrangement together and gives singleness of purpose to all the persons assembled on the platform of the railway, is the supposition that most of them are about to start by the same train, and those who do not intend to do so are busily engaged in preparing to expedite that departure, it follows that each division of the painting, which includes several groups, may be very conveniently described in a separate form.

Mr. Frith has displayed much judgment in selecting a high and wide arch of the station beneath which to place his most numerous assemblage of persons. This enables him to give importance to the nearly central portion of the composition, arrests the eye, carrying it upwards, and thus prevents it from being too sensible of the long lines of the train and the roofing of the building. Beneath this, the most elevated part of the station, arc—a foreigner, with his wife, disputing the cabman's fare; the father and mother with their boys going to school; the porter collecting the luggage from the pavement; behind whom are the sailors going to join their ships; the recruiting sergeant holding up his little child, with the recruits standing around him; above these are the railway porters, one handing up luggage to another who receives it on the roof of the train; above him floats, in small clouds, the steam from the safety-valve of the engine; and above all is seen part of the sky-light, which, unconsciously to the ordinary spectator, but most skilfully and effectually, not only carries the eye to the apex of the group and keeps it from wandering too readily towards the extremities of the subject, but actually connects the top of the painting with the carpet-bag and the other luggage nearly touching the frame at the bottom of the canvas. This central arrangement is well sustained by the strong contrasts of light and shade, and the richest portions of vivid colours being placed on the foreground of this large group. The height of this part of the composition being thus obtained, the relief and solidity towards the base of this artistic pyramid are effected by the black silk cloak of the woman attending to her hand-boxes being brought in strong opposition to the pure white of the shawl worn by the mother stooping to kiss her boy going to school, and the dark side of the group gets relief from cutting against the largest mass of white produced by the light dresses of the wedding party. The white dresses of the wedding party receive point and contrast from the little boy consoling his weeping sister, wearing a velvet dress of rich and dark green, while relief is provided by the warm neutral tint of the railway carriage behind. This group is separated from the next attractive incident in the composition by the deep and warmish-toned dresses of the detectives, who arrest the supposed forger as he steps into a carriage, whose livid face—something whiter than his light drab overcoat—attracts the attention towards that side of the painting, and the sombre dress of the guard who holds the carriage door open prevents the colouring from cutting too severely against the edge of the frame, and directs the eye to the prisoner's unhappy wife, who has seen the arrest and has risen to follow her husband as far as the indulgence of the detectives will allow. It is on this part of the picture that the artist has bestowed the most effective combination of facial contrasts, and very properly so, because it is on this spot that the most pathetic and moral part of the subject is developed. The haggard and careworn visage of the criminal, seized and brought to justice, when, a minute or two later, would have, perhaps, enabled him to reach a foreign clime, and live in such peace as constant anxiety and restless uncertainty would permit him to enjoy. The fear-stricken face of this man is turned towards the complacent and blandly smiling detectives, one of whom lays his hand on the culprit's shoulder, whilst the other produces the handcuffs to secure his arms. The terror and cadaverous face of the arrested man is still further contrasted by the calm and unconscious look of the old gentleman immediately above and behind him, who is comfortably seated, and intently occupied with his morning paper, between whom and the motionless attitude and official composure of the guard holding the door open on the other side is placed the weeping and terrified wife. There may be no great novelty in the event here depicted beyond a powerful illustration of a fact we occasionally read in the newspapers; but, while contemplating the scene, we experienced a strange feeling excited in our minds which seemed to invest it with a kind of dread, in comparison between the remarkably nice and well made clothes, the brightly-shining new hats, and the healthy, composed, and smiling faces of the detectives, and the terrible nature of the duty they are so blandly executing, and the awful consequences with which it may be terminated. There is something inexpressively painful in seeing for the first time that the catching of criminals is so profitable as to enable men to make so respectable an appearance, and to think that their success in life depends upon placing their fellow creatures in a prison, the only outlet from whence would be perhaps to perish on the scaffold.

Passing to the other side of the centre group, the interest subsides more into common-place. There is the hot and fussy woman, who is always fancying herself too late, impeded by a railway porter, wheeling an immense quantity of luggage; single men with their fishing-rods and gun-cases; a feeble old man assisted by his daughters; a bookworm; a game-keeper coupling a brace of setters previously to their being placed in the dog van; and, finally, an old lady and her daughter endeavouring to save their little pet poodle from the rough usage it is likely to meet with among the rest of the dogs by being allowed to take it with them, but all to no purpose, for the official seems to say, "We have our orders, and must obey them, mum." Some regret has been expressed that the colouring of

the roof of the station by Mr. Owen Jones no longer remains. We, for our part, after reconsideration, are well pleased that it has been removed, or the artist might have had still greater difficulty to contend against than he has had. The warm neutral tint which now pervades the upper part of the building is admirably managed to prevent the eye from being attracted away, and confines attention to the platform and the train.

Of the colouring we may briefly state that it is arranged with the same skill and learning that distinguishes the arrangement of the groups, and the execution is bold, free, and equally sustained throughout, with, perhaps, the exception of the rather crude state in which the dogs are pencilled on the extreme left; but, as Mr. Frith is not a professed painter of animals, the exception of unfinished is just enough to prove the rule of perfect elaboration. In all other respects it will, in little or no degree, detract from the well-established fame of the artist. For the sake of giving an instance of the freedom and firmness of execution, combined with close imitation of texture, we will direct attention to the painting and graduation of tint, as well as to the exact resemblance to the reality, of the lady's shawl in the foreground, stooping to kiss her son before he leaves for school; and as to harmony of colour, the bronze tone of her silk dress forms an excellent combination with, and contrast to, the colour of her shawl. This painting, in the branch of art to which it legitimately belongs, is a perfect success, and will prove an equally successful speculation.

PROGRESS OF THE METROPOLITAN MAIN DRAINAGE WORKS.

AT the last meeting of the Metropolitan Board of Works, held at the offices, Spring-gardens, on Friday, Mr. BAZALGETTE, Engineer-in-Chief of the Board, reported that during the spring of the year it is always difficult to obtain a sufficient supply of good bricks, and more particularly so when the season is wet, as the old stock is nearly exhausted and the new bricks have not come into the market. The Main Drainage Works have to some extent been retarded during the past month from this cause, although on the whole the progress made is tolerably satisfactory. The works, under Mr. Furness's contract, for the Northern Outfall Sewer are still conducted with great energy, and progress more rapidly than any of the other contracts. The ironwork for the aqueducts over the River Lea, the North Woolwich, and the London, Tilbury, and Southend railways is being tested, fitted and riveted, and the ironwork for all the other bridges is now delivered on the ground. The iron bridge over the road near Plaistow is finished, and the tunnel under the Eastern Counties Railway embankment progresses satisfactorily. The concrete embankment is completed for about three-fourths of the entire length of the sewer, and about 3,300 feet of the arching or aqueduct across the marshes have been finished. The total value of the work done up to the present time is about £257,000, so that the contract is now nearly half completed. Messrs. Brassey and Co. have been much retarded in the execution of the Middle-level Sewer contract, by the necessity for stopping the works in Oxford-street during the summer months, coupled with the stoppage of Holborn, and the consequent diversion of the traffic through Ligonier-street and the King's-road, &c., which form the line of the intended sewer, and further by the want of a diversion of the water of the Ranelagh sewer to enable them to proceed with the works in the Uxbridge-road, between Albion-street and the Grand Junction-road. This diversion has, however, now been effected. About 5 miles 400 feet of sewer, varying in size from 4 ft. 6 in. by 3 ft. to 12 ft. by 9 ft. 6 in. have been completed, at an estimated cost of £120,000. The works at the junction of the Ranelagh Storm Overflow with the Middle-level sewer in the Uxbridge-road are being pushed forward as rapidly as possible, with a view to immediately re-open the main road. The value of the work done under this contract is about £28,500. In Mr. Webster's contract for the Southern Outfall Sewer about 700 feet of sewer only remain to be finished, and the value of the work executed amounts to about £290,000. The Southern High-level Sewer works progress slowly; the cost of the work done is about £150,000, and about one mile of sewer remains to be constructed. Mr. Pearson has completed about 1,480 feet of the Southern High-level Extension Sewer, at an estimated value of £2,134. Messrs. Aird and Son are making good progress with the Deptford Pumping-station, and are ready for the reception of portions of the machinery, which will be delivered by Messrs. Slaughter and Co. in the course of the ensuing month. The value of the work executed by Messrs. Aird is £73,000. Mr. Dowse is progressing with the Southwark new street, and has completed about 2,000 square yards of paving, 930 feet lineal of subway, 1,142 feet of 3 feet 9 inches by 2 feet 6 inches sewer, and 163 vaults, at an estimated cost of £10,800.

THE HOLY SEPULCHRE.—The *Monde* publishes a letter from Jerusalem of the 27th March, in which, referring to some observations previously made on the dilapidated condition of the cupola of the Church of the Holy Sepulchre, it states that on the occasion of an accident which had happened to a pilgrim from the fall of a portion of the ceiling, it has reason to believe that the Cabinet of the Tuileries has called the attention of the Sultan to the subject. Whatever may have been the steps taken at Constantinople, it is certain that the Governor of Palestine has lately received instructions from the Ottoman Minister to take measures to prevent accidents to pilgrims in their visits to the church. An examination of the cupola has consequently taken place, and architects have expressed their surprise that the whole of the dome had not fallen in during the tempests of the past winter. The result of the consultation is, that the restoration of the building is declared to be a matter of urgent necessity.

DISCOVERY OF GREEK ANTIQUITIES.—A letter from Athens announces a discovery which has just been made by Mr. Starek, an English architect, and member of the archaeological commission sent to Greece. Researches which Mr. Starek has caused to be made at his own expense have brought to light the ancient theatre of Bacchus, upon the southern slope of the Acropolis. After eight days' unsuccessful labour, when all hope was abandoned, the first step of a staircase was discovered, and by degrees the whole site was laid open to a depth of seventeen feet.

WINCHESTER.—Workmen are engaged in pulling down the College tower, which has long been in an unsatisfactory state, and has recently been shown to be dangerous. It is to be rebuilt on the same site. The tower was erected by Warden Thurbarn, about 1478, and is a century later in date than the chapel which it adjoins.

ARCHITECTURE OF PALESTINE, FROM THE EARLIEST TIMES TO THE CRUSADES.*

EPOCH OF HEROD.

HEROD struggled all his life long to secure the title of *the Great*, yet he was nothing more than the magnificent slave of the Romans, who allowed him fetters of gold. But from the country and posterity he well deserves the epithet great, in consideration of the sumptuous monuments erected by him. Little does it matter to us, in our examinations, that they were proofs of his servility or his ambition. Let us proceed to examine them. Some masses of ruins, some trunks of columns, walls, solid foundations, sepulchres, built or embellished, and the basements of towers, but no one entire edifice, nor any ornamented one. It is undeniable that Palestine is a sepulchre of edifices as of individuals.

In Jerusalem we find, belonging to this glorious epoch, some portions of the wall surrounding Moriah, on the eastern and western sides; the entire plan of the construction of the Phazaelus; some few remnants of the solid masonry of the tower of Psephinus; the remains of two others which flank the north gate; the existing sub-basement of the Damascus Gate which I discovered in March, 1861; finally, the embellishments added to the sepulchres of the Valley of Jehoshaphat, to the north and south. Of all these, mention has been made by those who have written upon Jerusalem down to the present time. Little, therefore, remains for me to say, and I will be as brief as possible. I accept the opinion of Mr. Williams respecting the tower which remains on the west of the castle of David, and that of Phazaelus on the east. The latter preserves the architectural type of a Herodian tower, as described by Josephus (Book V. iv. 2). It is based upon the rock, which rises 5 feet above the level of the ground, and is covered with masonry of large rusticated stones. Here I observe that Herod in his fortifications made use of the Solomonic level, as I could plainly perceive in Herodium, Cesarea, and other places. The Jewish wall rises 38 feet 6 inches above the side of the fosse. Each course of stones recedes by five lines from the base upwards. I would, however, remark that in the interior it is 11 feet thick, relatively to the upper level of the east trench, which is 14 feet deep, and measures forty cubits on each side, reckoning the cubit at about 18 inches. It is then the same tower of Phazael described by the historian who tells us that Titus (Wars of the Jews VII. xi.) would have it preserved to show the kind of towers that fortified the city which he had taken by his armies. Some may object that Josephus mentions a cistern, and this is not to be found. But would it be possible to preserve it, in accordance with the system of fortification in use in the middle ages? I think not. I meet with nothing in opposition to the idea that the cistern was destroyed in order to gain a clear space of about 20 cubic feet, which would be valuable when soldiers required to be lodged there. It is unnecessary to draw attention to the other towers which flank the Damascus gate, and which I discovered by means of excavations. With the exception that they are of smaller dimensions, the differ in no respect from those already described. I may, however, say that the gate which I discovered, and which I call the north gate (Josephus, Wars of the Jews, V. xli.), is 12 feet wide and 26 feet high, with a round arch. The stones composing the jambs and the arch are of large dimension. This discovery is not so important in an architectural point of view as on account of the ancient city walls of Herod's time. It is one of the most interesting points in support of my opinion, that the walls on the north did not extend beyond the present walls. Not to dwell for ever upon the subject of walls, I will avoid going further into the matter here; but I will remark that the ancient portions on the eastern side of Moriah, like those at the Jews' waiting-place, appear to me to bear the Herodian character. I am far from adopting the opinion of M. de Saulcy, member of the Institute of France, who believes them to be Solomonic. Their construction shows great perfection, on account of the beauty of the materials employed, the regularity of their arrangement, and the vertical joints which rest upon the middle of the corresponding stones in the lower and upper courses; nothing of which is seen nearly so admirably executed in the walls styled Solomonic. In the latter, artistic genius just developing itself is observable; in the former, genius seems to have attained its full growth.

The Golden Gate, to the east of Moriah, is judged to be Herodian from its ornaments; but I am not of that opinion. I know that the temple and its walls were destroyed by the Romans, and it seems to me impossible that this gate, with its ornamentation, should have escaped the devastation. Its jambs are formed of stones square and not levelled. They of themselves, therefore, furnish proof of having been mortised in the old wall. The ornamented arches are cased with Roman masonry. How, then, is it possible to suppose them Herodian? Those who take this view do so because the lintels and architraves of the doors are formed of enormous blocks. It is true that this material is Herodian, and this has led to the erroneous induction. I believe that these blocks are remaining portions of the ancient Eastern gate, and that to them the more recent construction has been applied, formed upon the same plan as the ancient gate. I think so because the foundation walls have been discovered, and because it is said in the Mishna that the Eastern gate was 40 cubits long and 20 cubits wide, and these are exactly its dimensions.

We will now visit the sepulchres in the neighbourhood of Jerusalem. I unhesitatingly confess that I believe the ornamentation of all of them to be of later date than their original construction, and am of opinion that it was added during the Herodian period. I might maintain that the sepulchres of the kings were formed by order of that great sovereign for himself and his descendants, but what proofs have we in support of this idea? I hope M. de Saulcy will not hear me, since he attributes them to the era of the kings of Judah, to which epoch it was necessary that he should trace them, when he was pleased to characterise the sarcophagus taken from them as that of David, in order that he might deposit it in triumph at the Louvre, in Paris. By parity of reasoning I have met with the sarcophagi of Solomon and Rehoboam, one of which is, in fact, broken into fragments, while the other serves as a receptacle for water in the Hall of Justice at Jerusalem.

Let us now examine some of the sepulchres in detail. That of Absalom is a cubical monolith, measuring 21 feet on each side. Ionic columns support an entablature with ornamented Doric triglyphs and pateras. Above this frieze is an Egyptian cornice, at which point the monolith ceases. The whole of the upper part is in masonry. It is composed of a square dado surmounted by a cylinder, which is terminated by a torus, representing an enormous twisted cable; the whole is completed by a kind of pyramid of curved conical form, finished with a bouquet of

palm leaves. The total height of the monument is 52 feet. It exhibits, therefore, a mixture of the Greek and Egyptian styles.

Herod was of Idumean origin, it will be remembered. In Idumea are some monuments which recall Absalom's to mind. At the north-west corner of the vestibule, cut in the rock which surrounds the tomb of Absalom, is a rich pediment, ornamented with acroters and foliage. That of the Jews to the north of Jerusalem is of the same description.

The outer portico of the Sepulchre of Saint James is supported by two columns and two demi-pilasters of the Doric order, connected by an architrave, above which is a Doric fascia, ornamented with triglyphs and surmounted by a cornice. In the Haeledeina, to the south of the city, a fac-simile of this is seen. The Sepulchre of Zachariah is a monolith, each of the sides of which measures 18 feet in width. It is ornamented with two columns in the centre and two half columns inserted in a pilaster at the angles. Above is a simple architrave, surmounted by an Egyptian cornice, like that of the Sepulchre of Absalom. The whole is surmounted by a quadrangular equilateral pyramid. The total height of the monument is 10 feet. It is to be observed that the eastern side still shows the rough hewn work, and on the north it is not completely finished.

To visit the Sepulchres of the Kings, a court must be entered by a door excavated in the rock, ornamented by a simple filled in relief. This is under ground up to the commencement of the arch. At the extremity of the court is a vestibule, formerly adorned in the interior with two columns, which have been destroyed partly by an earthquake and partly by violence. Above the vestibule is a fascia in sculpture. The centre of the fascia is ornamented with a bunch of grapes, now sadly mutilated. On the right and left of this is a triple palm, a wreath of olive leaves and triglyphs, alternated with patera three times repeated. Above these is a garland of leaves and fruits, which droops at right angles from each side of the aperture of the vestibule. Above the line of the triglyphs is a cornice in a very ruined condition. Can this ornamentation have been executed at the period of the kings of Judah? I believe not; but, I err, I am open to conviction. Would that we could find something more satisfactory in Samaria, Cesarea, Antipatris, Herodium, Phazael, and at Castle Cypron, but, excepting some columns, a few ruinous capitals, and immense accumulations of stones, nothing can be discovered of the great Herodian constructions. I therefore turn to a more recent epoch.

PERIOD OF CONSTANTINE.

When the accession of Constantine the Great to the throne had secured the triumph of the Cross, Palestine witnessed a vast architectural movement, and a number of churches were erected in localities rendered celebrated by the evangelical mission of our Saviour. From this cause, in the fourth century Jerusalem attracted the special attention of the Christian monarch and his pious mother, and here was erected a basilica, which silver, art, and precious materials combined to render worthy of their piety and magnificence. I will first describe the basilica of the Resurrection, and then proceed to other monuments, the work of the first Byzantine Emperor. It will, I think, be interesting to my hearers if I give them some description of the Sepulchre of Christ, over which Constantine erected the temple. I cannot stop to consider all the objections brought against the authenticity of the tomb, but will merely observe that the tomb exists, and that I have seen it. In the neighbourhood of the city, particularly on the north and east, tombs cut in the rocks may still be seen. Many are in a ruinous condition, others are more perfect. They are composed of two divisions, the vestibule and the sepulchral chamber; the latter closed by means of a stone of an elliptic form. The evangelist St. Matthew (xxvii. 60) describes an occurrence which may be witnessed in the present day in the same locality:—"And Joseph laid the body in his own new tomb, which he had hewn out in the rock; and he rolled a great stone to the door of the sepulchre, and departed." Christ's sepulchre, as at present existing, is divided into two compartments, the vestibule, in which the guard of soldiers was placed, and the tomb itself, which has a small door of the same construction as those of the Sepulchres of the Kings and of St. Pelagia on the Mount of Ascension.

The religious Greeks, Armenians, and Latins, assert that the whole monument of the present sepulchre is rock beneath the marble facing. I could not discover this, nor do I believe it. Even if it withstood the destruction which befell the city under Titus, and the occurrences of Hadrian's time, we know from history that it was greatly mutilated by Cosroe II. in 614, and by Hakem, Caliph of Egypt, in 1010. But I am quite certain, beyond all doubt, that I saw and touched the rock in the pavement, which rises at the distance of 21 feet to the west of the sepulchre, and in the sepulchre itself, by the longitudinal cutting which is here exhibited. It is essential to remark that all the sepulchres of antiquity are of the same length and breadth, the former 6 feet, and the latter 2½; and in this respect the Sepulchre of Christ forms no exception to others. The disputes would never have arisen if Constantine had not been guilty of the religious vandalism of separating the sepulchre from the rock, on the western side, in order to enclose the sepulchre within the temple, and the further barbarism of adapting the sepulchre to the temple and not the temple to the sepulchre.

The present church of the Resurrection retains none of the elements of the grandeur of Constantine. They disappeared when the invasions of the Persians and Saracens covered Palestine with ruins. The successive repairs to which such portions as escaped have since been subjected have deprived the structure of the characteristics of the fourth century, with the exception of the north wall and the walls and pilasters of the great cupola, which are primitive. The Crusaders, who found the sanctuaries separated, reunited them; and it is their work which is now seen. From their time to the present no change of importance has taken place. On the 12th October, 1808, a part of the rotunda and the Calvary, also a portion of the south wall towards the west, were destroyed by fire. The absurd and unintelligent repairs of the Greeks in many points completed the devastations begun by the flames, and numbers of interesting details of Gothic or Byzantine art disappeared, thanks to the degenerate sons of Constantine the Great. The precious marbles which ornamented the basilica of Constantine were taken by the Mussulmans in the seventh century to adorn their mosques, especially Koubbet-es-Sakhrah. Hence, among the ruins recently removed from the eastern side of the sepulchre shafts of columns have been found, formed of beautiful marble and granite, with capitals in form precisely like the gilded capitals of the mosque. It cannot be supposed because these precious relics are found there that the remains of the mosque, which was never destroyed from the period of its erection, had been carried and placed round the sepulchre and in the vicinity of the south. I am, therefore, compelled to conclude that it is not in the Temple of the Resurrection, but, elsewhere, that we must seek the elements of the period of Constantine.

Let us now turn to Bethlehem. The Basilica of the Nativity at Bethlehem was begun by Saint Helena, and terminated by her son Constantine, between the years 327 and 333 of the Christian era. Some authors have attributed the erection of this monument to Justinian, but a very cursory inspection will suffice to prove that it presents none of the characteristics of the architecture of the sixth century, and that this opinion must consequently be erroneous. It is the oldest and best authenticated monument of Christian art in Palestine. The eye embraces five naves at a single glance. The centre nave is larger than both the two together on either side of it. They are of great length, and formed by four rows of Corinthian monolithic columns, and are composed with eleven intercolumniations (*travée*). The transept is as wide as the centre nave. The north and south extremity terminate in a semicircular apsis with a radius of 14 feet. These apses project beyond the exterior walls of the building. On the east, on the side of the transept, separated by a wall formed by the Greeks, the five naves reappear and form the choir of the church. The centre nave is composed of two intercolumniations and a semicircular apse, equal with those which terminate the transept. The two which succeed, right and left, are terminated by a straight wall which commences at the choir. Owing to this arrangement of the lower sides of the Basilica, the upper portion of the cross is symmetrical in relation to its lateral arms. The width of the great centre nave is 30 feet; the first lateral nave 12, the second 10; so that the total width of the five naves is 74 feet, while the entire length of the centre nave is 180.

The monolithic columns forming the divisions of the naves are 17 feet 3 lines in height; their capitals are Corinthian; that is to say, the proportions only slightly differ from the proportions demanded by the rules generally observed in the time of the Roman Empire. In fact, the column is short relatively to the diameter of the base, which measures 2 feet 6 lines. Besides this, it presents no very distinctive characteristics, but shows signs of the decadence; reposing, as it does, upon a plinth, which measures 3 feet 2 lines on each side. This want of proportion has been supposed by some to have been owing to the inability of the calcareous bed from which the columns were derived to produce monoliths of greater height; but, as the quarries still exist, and I have carefully examined them, I cannot admit the explanation; but rather opine that it is simply the result of the decadence of art. As I have already stated, the diameter of the base of the column is 2 feet 6 lines; the height of the shaft, comprising the base and capitals, is 17 feet 3 lines, and, consequently, the latter is short in proportion to the former. Further, the base has no very decided character. It rests upon a rectangular plinth, measuring 3 feet 2 lines on each side. I may further add that the total number of entire columns is 46, of half columns 18, and that the latter are inserted in the pilasters on the wall, where the rows of columns terminate. In the abacus, all these are ornamented with crosses in relief. In the lateral naves (side aisles) architects support the *armatura* of the roof. In central naves, the walls, which are 30 feet high, are also supported by the architraves, on which rests the great *armatura* of the roof. The roof is not vaulted, but composed entirely of wood. In the upper part the walls contain circular-headed windows, corresponding with each space between the lower columns. The spaces between the windows, and all the rest of the surface of the walls, in the twelfth century, were ornamented with mosaic work. The present roof dates from the seventh century, and the Greeks alone claim the right to repair it. I conclude then, that, this is the only complete work of Constantine which remains to us after the lapse of 1,529 years. This alone has survived every destructive influence, and maintained its ancient characteristics. It is a very striking specimen of Roman genius. The venerable aspect of the edifice, the harmony of its combinations and its original conception, all arouse admiration. It is indisputable that the general plan of the church produces an impression of beauty, not only from its dimensions and the simplicity of its outlines, but because it is the embodiment of an intelligent phase of religious architecture, and thus cannot fail to satisfy the taste and please the eye.

EPOCH OF JUSTINIAN.

The Emperor Justinian, no less ardent than his predecessors in erecting religious edifices, did not forget the Holy Land, but there raised a great number of such structures. All, however, which remain standing as mementoes of him are the basilica of St. Mary, at Jerusalem, now converted into the Mosque El-Aksa; the tower called Justinian's, at Bethlehem, and the ruins of the church of St. George at Lydda—the ancient Diospolis. In other parts of Palestine other religious monuments were erected by this Emperor, but their localities are only indicated by heaps of ruins; the details have vanished, either from the effects of fire or violence, chiefly through Mohammedan fanaticism. The Aksa shows its Christian origin, and Procopius has left us a detailed account of its construction (de A. Edif. Justin. N. 6.) It has in front of it a portico with a vaulted roof, corresponding with the seven naves of the church. The central arch is much larger than those on either side. The exterior and interior present a very pointed arch. The whole building exhibits the well known plan of a primitive Christian basilica. The centre nave is supported by six large columns of *breccia rossa* of Palestine with ordinary Corinthian capitals, somewhat disfigured by incongruous details and ornament. These columns support pointed arches, above which are two rows of windows. The first two lateral naves are supported by square piers, the other four are much lower, of a totally different construction, and appear to have been added at a much later date. In this particular I fully agree with the Rev. George Williams, in his "Holy City," that the mosque was enlarged on the east and west sides by El-Makdi, in 775-785.

In its present state the length is not in due proportion with the width, while in its primitive condition the proportions were exact, and the basilica was in the form of a cross. On the south, the church is terminated by a transverse nave, separated from the grand longitudinal nave by pointed arches surmounted at the intersection of the cross by a cupola supported by four piers, each ornamented with two columns of verd antique supporting Corinthian capitals. The cupola is a dome contracted at the base, which admirably sets off its forms. It is decorated with modern paintings quite unworthy of the edifice, and with mosaics which date from Selim I. and Solymán the Magnificent. The choir was demolished by the Arabs after having been injured by an earthquake, and is now replaced by a simple Arab wall, against which stands the *Milrab*, ornamented with beautiful small porphyry columns. In the transverse arm of the cross the choicest marbles are employed for the light columns, which sustain capitals of various and extravagant forms, dating, no doubt, from the remotest Jewish antiquity, and by no means corresponding with the elevation of the columns. The roof of the mosque is supported by a framing of wood. Such is the result of my observations upon the mosque El-Aksa, which the want of time prevents me from describing in fuller detail.

The Tower of Justinian, at Bethlehem, built for the defence of the Temple of the Nativity, merits some notice. It is square, and measures 97 feet on each side; its height is 122 feet. The walls, which are 22 feet thick, are solid, and built with large blocks, which diminish with each course of stone. The Greeks, who are the possessors of the tower, in the thickness of the walls have made several chambers, which are used for the reception of pilgrims. The largest of these chambers is capable of containing forty persons. I have mentioned this edifice to show that a complete work of Justinian's era exists at Bethlehem, and that, as far as masonry is concerned, it will bear comparison with that employed by Constantine in the basilica of the Nativity. In the latter, the good Roman style is seen; in the tower, the decadence. The church of St. George, at Lidda, the ancient Diospolis was erected by Justinian; of this splendid edifice nothing at present remains but a portion of the walls and the eastern choir, with some magnificent pilasters and capitals. On the south side is a large pointed arch supported by large columns mortised in the piers, and surmounted by Corinthian capitals. A great part of the church still remaining has been converted into a mosque by the Mussulmans. The design which I exhibit will show the date of this monument better than any description.

Epoch of the Arabs.—I do not think it necessary to translate the description of the Mosque of Omar, seeing that it has already been translated for the Mount Moriah.

The whole platform is formed of the rock, which is clearly seen on going into the dwellings of the dervishes and the guardians; as well as in some oratories, and in the cisterns, especially the two on the north of the great mosque Combettes-Sahkrah—the Dome of the Rock. Its plan is simple: two concentric octagonal aisles surround the circular central part, which supports a pointed dome. The form of the dome serves alone to characterise the building. The many descriptions given of its interior prevent me from repeating it, and I shall only remark that its doorways and windows are of Pointed style; that the sixteen columns standing in the inner octagon aisle are of equal height and have the same capitals, but rest on unequal bases, which exhibit very much the characteristics of the period of decadence to which the building belongs; that the twelve columns, which are to be found between the four piers supporting the tympanum of the dome, have a diameter different from the sixteen first met with, as well as different proportions of shaft, capital, and base; and that all these columns support arches slightly pointed. The vaulting of the dome is of wood, covered with Arabic gilding; the tympanum and spandrels of the arches are inlaid with elegant mosaics, which date from the time of the Sultan Selim I. All this induces me to believe, according to history, that the mosque was erected by Abdel-Melik Merwan, in the year 68 of the Hegira, and that its columns of precious marbles and various origin have been taken by the Mussulmans from the basilica erected by Constantine over the sepulchre of Jesus Christ. Constantine alone is well known to have enriched the religious edifices of the Christians with marbles, and history reproduces but too many examples of the spoliation of these buildings by the Mussulmans to decorate their mosques.

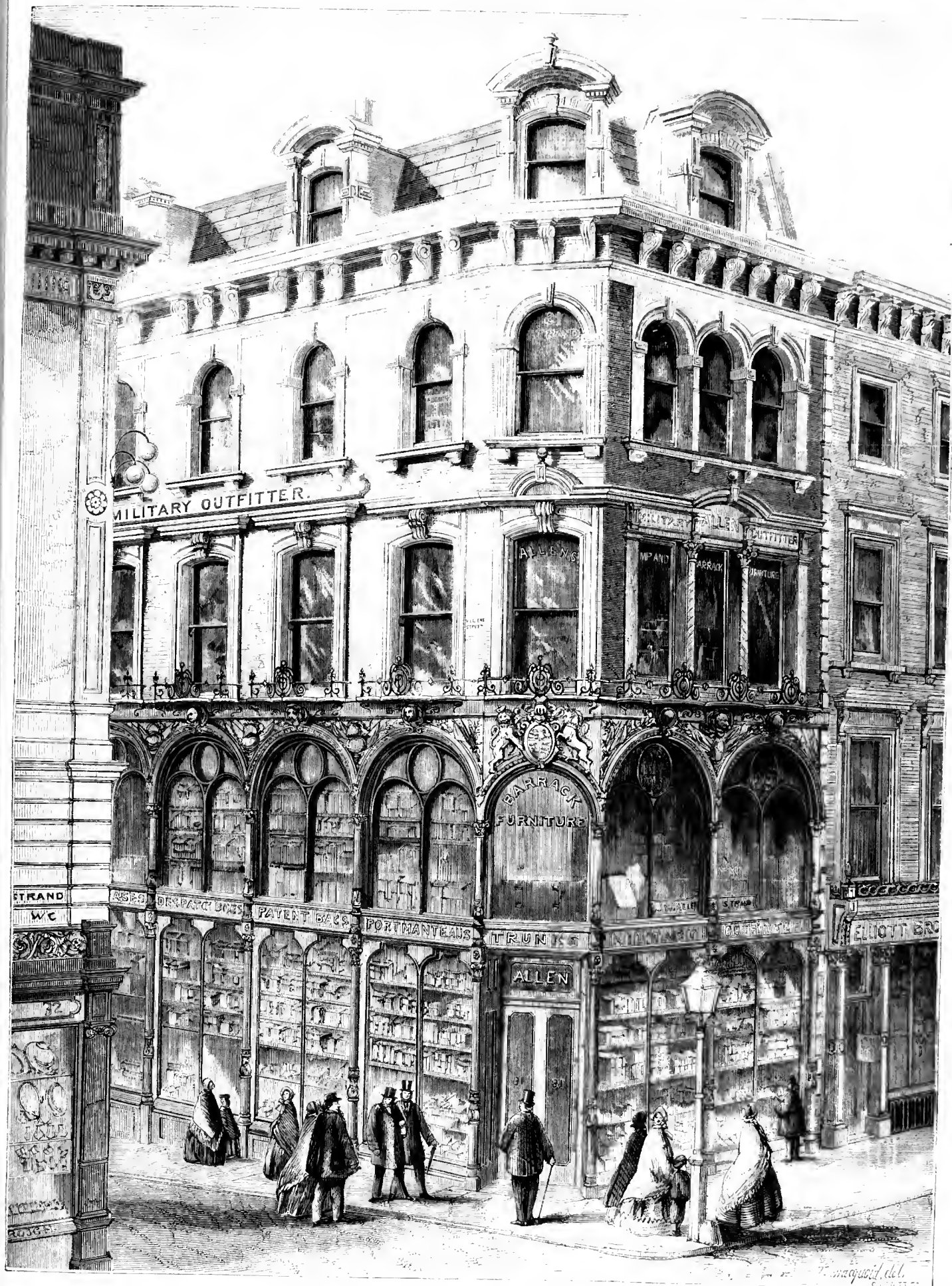
ANCIENT ART.

THE first of a course of lectures on the "History of Ancient Art" was delivered by Mr. Newton, at the Royal Institution, on Wednesday week. Mr. Newton pointed out that the basis of all we know of ancient art is the testimony of Pausanias, who travelled through Greece in the second century A.D., and noted the chief famous or beautiful works he then found existing. Pausanias's work is to ancient art what Murray's handbooks to Italy or Greece are to the present state of those countries. Were the remains still extant or above ground, we should have no difficulty in identifying the work of each artist from his description. Unfortunately, however, this is not the case; nearly all has been hopelessly destroyed; some few fragments alone, and these chiefly inscriptions, being built into the walls of churches and other modern buildings, and a few more buried under the accumulated earth of ages, and to be discovered only by the painful and too often unproductive toil of excavation. The ancient temples were the museums of the old people, with this difference, that their contents were unarranged, and consisted of statuary, terra cottas, votive offerings, &c., placed in them from time to time. In our museums, on the other hand, we attempt something towards an historical or archaeological classification, and for this work take Pausanias as our surest guide. Mr. Newton then proceeded to state, that all sculpture may be divided into two great classes—1. Sculpture in the round, with the figures detached; 2. Reliefs, more or less detached, and therefore called *alti* or *bassi*. He added, that Archaic Greek Art (the subject of his first and present lecture) may be conveniently divided into three principal divisions:—1. Heroic and partly Prehistoric, from the earliest dawn of art to B.C. 776 (the institution of the Olympic games); 2. Semi-historical, from B.C. 776 to B.C. 580; 3. Historical, from B.C. 580 to B.C. 478 (the close of the Persian War). The first, or Heroic period, was one in which the people worshipped rude stocks of wood or stone, called *terms*; and the first great improvement, whereby heads, arms, drapery and symbols were more or less intelligibly indicated, was in ancient times attributed to Daedalus—no doubt an *eponymous* name, to indicate the progress of art. Daedalus (or the system he represents) preceded Homer, who alludes to him. Such primitive idols were the Palladium which Diomed stole from Troy, the statue of the Argonautic goddess Chryse, and the original Diana of Ephesus, whose type we know, from the story of Demetrius, the copper-smith, in the Acts, was still being reproduced in the first century A.D. Of these earliest idols (*ζόανα*) none actually have come down to our times; but we have representations of them in works of art of the second or semi-historical period, from B.C. 760 to B.C. 580—such as vases with scenes of the taking of Troy, the Alar of the goddess Chryse; which should be compared with the older coins of Samos, &c. Homer tells little positively, but much negatively, with reference to art. It is clear that very few statues existed in his time, and that the temples were of the humblest kind, neither Doric nor Ionic architecture having been developed so early; but Homer does mention, with much detail, works in metal-lurgy, such as the ornamentation of cuirasses, the shield of Achilles made by Vulcan, the embroidery of Helen, &c. There can be no doubt that he must have seen works similar to those he describes: most likely in the treasuries of different monarchs—such as those of the kings of Lydia, of Atreus, at Mycenæ, of Orchomenos, &c., or possibly stored (as in later times) in some of the temples. These works were reliefs, put together in pieces like the fragments of the Chariot from Perugia in the British Museum, and hammered up (*σφύρηλατα*), not cast in the lump. The peculiarity of the art is well shown in the most ancient vases—a few of which are in the Museum, and more in the

collections of the Mus. Gregor. at Rome and M. Campana; and we learn from these that, as compared with the works of the later styles, the human figure was very little individualised, while the backgrounds were covered with flowers, animals and various adjuncts, and with geometrical patters. The artist, in fact, tried to represent nature as he actually beheld her, with entire absence of aerial effect or perspective. A comparison with the reliefs lately procured by Mr. Layard from Nineveh (and especially with the bronze bowls found by him there) shows clearly whence the early artists obtained their first ideas:—indeed, it is likely that genuine specimens of Assyrian art were preserved, till a late period, in some of the royal treasuries, having been brought to Greece through the commerce the Phœnicians or Carians had with the western settlements of that empire. With the arrangement of the subjects in these vases, we may aptly compare Pausanias' description of the Chest of Cypselus, which he himself saw, and which may have been made about B.C. 750. On this chest (which was probably not unlike the bridal *Cassoni* of Italy) there were reliefs in gold and ivory, arranged in parallel rows, with the names written over the different personages represented. Of the archaic vases, the most celebrated still extant is the so-called François Vase at Florence. This doubtless is much later than the Chest of Cypselus, but still early enough to show a remarkable similarity in style. To this second period belong the two famous artists Theodorus and Rhœceus, the first temple at Ephesus, the establishment of the Olympic and other games, the gradual extinction of the Heroic Monarchies and the introduction of popular Constitutions, and the commencement of Lyric as distinguished from Epical Poetry. The Third or Historical period, from B.C. 580 to B.C. 478, is the teeming period in the History of Art. Then flourished the Seven Wise Men, the first Natural Philosophers, whose influence is felt even to this day, and the greatest and the last of the early historians, Herodotus. Magnificent festivals became common, and Greece put forth her young vigour in the foundation of prosperous colonies, at Cyrene and Marseilles, in Spain and Sicily. During the same period, too, the great early temples of Posidonia (Pastum), Selinus, Ægina, and in Asia Minor, were commenced. It was the cardinal period in the history of Greek art. Then was it that the influence of Egypt (the China or Japan of ancient times) was being felt in Greek art, and the Greek factory at Naukratis was established, during the reigns of the three liberal Egyptian monarchs Psammetichus I., Apries and Amasis. The first of these princes employed 40,000 Carians and Ionians as mercenaries, some of whose names, inscribed by themselves, may still be read on a monument in Upper Egypt; and Rhodes, Halicarnassus, Cnidus, and other cities on the seaboard of south-western Asia Minor, enjoyed a lucrative commerce with Egypt. To this period, too, the artists Dipœnus and Seyllis are assigned by Pliny; and to the latter end of it, such monuments as the Agamemnon-relief at Paris from Samothrace, the figures from Polledrara near Vulei; the seated figures from the Sacred Way at Branchidae, and especially one of these, the portrait of a certain Cares, the ruler of Teiehoessa, which bears his name and titles in very early Greek characters; a lion and sphinx from the same place, together with a very remarkable collection of gold ornaments, vases, and terra-cottas, recently found in a cemetery at Camirus, in Rhodes. Many of these objects, as the statues and lion from Branchidae, have a marked Egyptian character; and it should be remembered that, with the Græco-Phœnician antiquities from Camirus, were found also undoubted Egyptian porcelain and glass, and some genuine as well as blundered hieroglyphics. One cartouche that was found at Camirus bears the name of an Egyptian king, which Egyptian scholars declare must be that of either Psammetichus or Apries. It should also not be forgotten that the Greek writing on the lion from Branchidae, and on the monument of Psammetichus, in Upper Egypt, is identical in style. We also know that two Samian brothers, Teieles and Theodorus, went to Egypt to study sculpture, and we might therefore anticipate the prevalence of an Egyptian influence upon the contemporary Greek style, though we do not find that the stiff architectonic canon of Egypt was adopted by Greek artists. In the case of the relics from Polledrara, Phœnician influence may be readily traced, especially in the relief of a winged lion, precisely similar to those found by Mr. Layard at Nineveh. On the Camirus gold ornaments, too, the Oriental or Persian Arctis is a common subject. In the gradual progress of sculpture, it may be noted how the artists went on from the easiest to the more difficult: first, we have simple upright blocks; then two or more figures draped to the feet, but stationary or motionless; then figures in action; and, finally, pedimental undraped figures, arranged so as to make subjects, such as those from the temple of Ægina, but subordinated to the geometric lines of the architecture. These doubtless date from a little before B.C. 478, which was the great temple-building age, the period when the Doric and Ionic styles were greatly developed, and when, owing to the great popularity of the public games, artists had peculiar opportunities for studying the nude forms of athletes. It was the custom of those times to dedicate in the temples the statues of celebrated victors; and these were, probably, in most cases, made from a careful study of form of the individual athlete. Some instances of these early statues we may still detect on the most ancient coins of Posidonia and Caulonia; on the latter of which Apollo may be recognised, holding a little figure in his outstretched hand. A similar representation of the Apollo, by Canachus, which was carried off from Miletus by Xerxes, may be seen on the coins of that town; a reduced copy, too, of the same statue exists in the Payne Knight Collection at the British Museum.

In conclusion, Mr. Newton stated that the famous groups of sculpture from Selinus were about the same date as the Æginetan pediment, and that it was not improbable that these latter were the work of Onatas, whose groups at Olympia Pausanias himself saw. Generally, the history of Greek Art shows clearly that it was no sudden discovery, but progressed step by step, partly influenced on the one hand by Egypt, and on the other by Phœnicia; and that the characteristics which mainly separate it, as a style, from the colossal conceptions of Egypt are the representation of the human figure in its true proportions, and not agreeably with an arbitrary canon; the introduction of dramatic action; and the combination of groups so as to suit pedimental architecture.

PARTIS COLLEGE.—The Trustees held their anniversary meeting on Thursday last. The business of the day having been transacted, the Trustees, with the chaplain and medical officer of the College, afterwards dined together, in accordance with the desire of the founders, at the York House, Colonel Blathway presiding. Every arrangement having been made by the architect, Mr. Scott, the works connected with the College Chapel will be commenced without delay by the builders, Messrs. Morgan and Lovell, and it is expected that during the summer all will be completed.



SHOP, 31, STRAND.—MR. JOHN BARNETT, ARCHITECT.



LONDON AND MIDDLESEX ARCHÆOLOGICAL SOCIETY.

MEETING IN THE CITY.

A GENERAL meeting of the members and friends of this society was held on Monday, the 28th ult., and was numerously attended. The company, by the permission of the Master and Wardens, assembled at noon at Bakers' Hall, Harp-lane, Tower-street, where the chair was taken by Mr. Alderman FINNIS, who briefly inaugurated the proceedings of the day.

Mr. Deputy LOTT then gave a lengthened history of the Bakers' Company, his lecture being illustrated by old charters, registers, &c.

A conversation followed, and at the close of the meeting,

Mr. HENRY W. SASS, the indefatigable and excellent honorary secretary of the society, exhibited and gave some account of various pieces of antique gold and silver plate belonging to the Bakers' Company.

A vote of thanks to Mr. Deputy Lott and Mr. Alderman Finnis closed the proceedings in the Hall. Having visited the Court-room of the Company, the members and their friends proceeded to the Church of Allhallows, Barking. The company were received by the incumbent, the Rev. JOHN MASKELL, who afterwards read a paper, in which he gave many interesting particulars respecting former vicars of the parish.

Mr. CHARLES HALLY then read the following paper on Brasses and Monuments found in the Church of Allhallows, Barking (which was prepared by Mr. J. G. WALLER, who was unavoidably absent):—

NOTES ON SOME BRASSES OF ALLHALLOWS, BARKING.

Notwithstanding the destruction of the major part of old London by the Fire of 1666, there are still left a few of the ancient churches. These, happily, preserve a great number of monuments, more, indeed, than one might have expected. Of these, Allhallows, Barking, is probably second only in interest to that of St. Helen's, Bishopsgate. The brasses are especially interesting as relics saved from a great catastrophe, and some have in themselves special claims.

I take the earliest to be a coat of arms, party per pale, a fleur de lis, and bordure engrailed, enclosed within a circular fillet, on which is engraved "Pries to l'ame Wilton Tong g' ytt y—Ky diu de sonn alme eyt mercy." It probably belongs to the close of the fourteenth century. The next example worthy of attention is to the memory of John Bacon, a woolman, who died 1437. He is represented by the side of his wife Joan, in the ordinary costume of the time, his feet resting on a woolpack, in allusion to his trade. His wife is not commemorated by any date of decease, so she was the survivor, and without doubt erected the monument. On this view, we assume that the date is pretty nearly that of the execution of the memorial—a very important point in connection with ancient monuments. It is of about the best period for the art of engraving monumental brasses. For if we examine those executed from 1410, and twenty years subsequently, we shall find a grace of execution and a simplicity of design not previously seen, and what is more, that will not be found in foreign brasses of the same time. The most beautiful example of this period is that to the memory of Prior Nelend, at Cowfold, Sussex. Besides this, however, we have numerous instances all over the country. I may instance Cobham, Kent; Beddington and Kingston, Surrey, among these in the vicinity of London; and I wish especially to mention the beauty of drawing that at this period is thrown into the figures of hounds at the feet, for it is scarcely to be surpassed, and it is a strong argument in favour of the indigenous character of the English art that no foreign examples can compete with us in this particular. The heart, on which is inscribed "Mercy," placed above the figures encircled in a scroll, is frequently found so introduced at this period of monumental history. Formerly the heart was considered the seat of the soul and the emotions, and the inscription is probably an invocation, meaning "mercy on the soul." It is sometimes shown between the hands of the deceased, as if the latter were offering it in prayer.

The next to which I will direct your attention is the Flemish brass to the memory of Andrew Eryngar. It is the best we have in England of its period of execution, with the exception of that to Thomas Pounder, at St. Mary Key, Ipswich. It is also remarkable that in both instances the artist has committed errors in the heraldry, a proof of the work being executed abroad. The arms are those of the Salters' Company and of the Merchant Adventurers. In the former the chevron is turned upside down, and in the latter the lions are passant only, instead of being passant guardant. The latter arms are also in the Ipswich brass, and similarly in error.

The brass is exceedingly well engraved, the male figure having the appearance of a portrait. Above the figures is the composition known as a *pieta*, or deed chest, in the lap of the Virgin Mother. There are not many instances of this subject on monumental brasses, and only in those of late date. There are sufficient indications of the use of colour to make out the whole plan, but it requires to be judiciously searched for. The diaper background, representing tapestry, is red, and the same is employed at the back of the chair in which the Virgin is seated. The Merchants' mark is given at the foot of the figures, as in the brass of Thomas Pounder, at Ipswich, probably by the same designer. Notwithstanding the wilful defacement of the inscription, the whole is easily deciphered, and reads as follows: "Of your charite pray for the soules of Andrew Eryngar, cytezen and salter, of London, and Elynn hya wyff, on whos soules Theu have m'cy. Amen." On the scrolls, that to the male figure has, "O filij dei misere mei;" to the female, "O mater dei memento mei." Both these prayers are allusive to the group represented above the figures.

The brass is inlaid into a stone, with symbols of Evangelists incised at the angles of this sentence, "Ne reminiscaris domine delicta nostr' vel Parentum nestrorum neque vindictam animas de peccatis nostris." The following are placed one above the other below the figures, likewise de peccatis nostris, "Sana domine animam meam quin peccavi tibi. Ideo deprecor majestatem tu tu Deus delicias iniquitatem meam." The first is in the antiphon of the litanies of the Sarum Breviary; the latter in the third nocturn of the office for the dead, and the responsory in the second nocturn of the same.

The father of Eryngar was, doubtless, a Fleming; he was a brewer, and bequeathed to the church of Allhallows 6s. 8d. for tithes and oblations forgotten, and £1 6s. 8d. for making, painting, and setting up the rood in the same church; to a priest of good name and fame, to sing a trental of St. Gregory in the said church for a whole year next his decease, 40s., 41s., or 42s., as his executors might best agree with him, &c. He also left property at Antwerp to his wife, to revert in five years to his son Andrew. This connection of the family with Flanders is so far interesting, as it gives a reason for the monument being executed abroad. I may remark that the use of incised work on the stone as well as brass, exists only, as far as I am aware, in this example.

The next in interest is one to the memory of William Thynne, Master of the Henshold to Henry VIII.; date 1546. This was in a very mutilated condition, but has recently been restored, at the cost of the Marquis of Bath. When the fragments were removed from the slab, it was discovered that the reverses were engraved also, and, from the character of the execution, the older portions were not of earlier date than the beginning of the sixteenth or, at most, the end of the fifteenth century. The figures were composed of portions of an ecclesiastic holding a chalice, and of a female figure. The reverses of the inscription fillets were scarcely earlier than the monument, for which they merely supplied material. They were composed of fragments of inscriptions mostly belonging to one memorial, and preserving the Christian name and rank of deceased, one "Sir" John, &c. There cannot be the smallest doubt but that these were the results of the rifling of the tombs of the then recently dissolved monasteries—most likely those of London itself.

In many respects it is an interesting memorial of the period. The figures are good examples of costume, and the inscription, which is lengthy, is illustrative of the religious feeling which ensued upon the overthrow of the ancient faith. Much might be said upon inscriptions of this period of transition, and it is one well worthy of attention for its historic value.

I now pass on to a mere fragment, part of the decorations of a tomb, which has not preserved either name or the arms of the person intended to be commemorated. This, which represents the Resurrection, is not of common occurrence upon brasses, but is, nevertheless, one of the few subjects from Scripture which occur upon monuments. All those known

upon brasses are of late date, and the points worthy of remark are, that we do not observe that rigid adherence to the costume of the time which is the rule in Medieval work. The Roman soldiers are somewhat fancifully attired, as if the artist was aware that some difference should be made between the soldiers of Pilate and those of Kings Henry VII. and VIII.

There is another point, also, which must not be overlooked. In these late representations of this subject, the soldiers are not all asleep, but some are witnesses of the miracle.

Now, this treatment, which we at the present time think most natural and consistent, was not that which prevailed in earlier ages. I would only allude to the beautiful composition at Lincoln Cathedral, a cast of which can be seen at the Crystal Palace, as a type of many others, in which all the soldiers guarding the tomb are represented in profound slumber. Some writers—for instance, Méné, Didron—have thought much of this, and see in it the result of a deeper faith, which required no witnesses to establish their belief. However this may be, the fact belongs to the history of religious art, if not, indeed, to be regarded as one of the signs of the times.

The last memorial I shall select for notice is an almost effaced slab in the north aisle, once having the figure of a priest under a canopy incised upon it. It now has inlaid upon it a brass inscription to the memory of Thomas Vyrly, vicar, who died in 1451. Besides this there are two small detached wings, and a form which has hitherto been a puzzle to assign a name to, or to give an explanation of. One might suppose it was intended to be a chalice but for the stem, which is more like a bell handle. Some have supposed it may have been a face of metal to an incised slab, but there is an escalloped ornament which renders this view impossible. Something has been defaced or beaten out in the centre, which, if remaining, would possibly have led to a solution. It has occurred to me whether it might not be a form of the pax, and the part defaced a representation of the Virgin and Child. But I can only offer it as a suggestion, for all those with which we are familiar are of a different shape. At the same time, however, they are of a much later date.

In the above remarks I have avoided any elaborate description, or even a review of the entire number of memorials scribbled. That has already been accomplished by Mr. Maskell. I have rather pointed out those distinctions which render the monuments particularly worthy of regard. I would, in conclusion, observe that the preservation of ancient memorials cannot be better attained than by making a registry of them in the manner of Mr. Maskell's pamphlet. We are apt, very complacently, to ascribe the wholesale destruction and pillage, of which we have so much evidence, to the fury of the Puritans. I am convinced, by long observation, that by far the greatest mischief has been done in later times; by neglect, by cupidity of workmen, and the general disregard of those to whom the preservation of such memorials have been consigned.

Mr. GEORGE R. CORNEN then read some particulars respecting the wills, history, &c., of persons to whom monuments had been erected in this church, which we may give hereafter.

In the church of Allhallows, Barking, amongst other specimens of ironwork, are three beautiful pieces of wrought iron, in the shape of sword bearers, which are always used when the Lord Mayor pays a visit to the church, as is the custom at other city churches. We believe that the church of Allhallows, Staining, is at present undergoing reparation, and that the ironwork it contains is being taken down, with the intention, we have heard, of not being replaced in its original position. We hope such a decision, if it have been come to, will be reconsidered, and that such a piece of intended vandalism will not be perpetrated. In St. Olave's, Hart-street, there is a considerable quantity of ironwork, the tops of the pews having hat pegs in that metal.

From Allhallows, Barking, the company proceeded to St. Olave's, Hart-street, (which escaped the Great Fire of 1666) where they were welcomed by the rector, the Rev. A. Povah, who read a paper, in which he gave much curious information respecting the deeds and registers of the church, referred to the brasses and other monuments, giving biographical sketches of the more eminent persons to whom monuments were erected, and some account of the rectors of the parish from the fourteenth century downwards. Some pieces of ancient plate belonging to the church were shown to the company by Mr. Sass and one of the churchwardens.

The company next proceeded to pay a visit to the church of St. Dunstan's-in-the-East, designed by Mr. William Tite.

The Rev. THOMAS HUGO, F.S.A., gave an extempore account of the church, and read some very interesting extracts from the Churchwarden's books, which commence from the year 1494. The information which he furnished was specially selected by him as supplementary to that given in the history of the church and parish by the late rector, the Rev. T. H. Murray. Mr. Hugo traced the history of the church from the earliest times down to its destruction in the Great Fire, and from thence to its repeated erection first after that event by Sir Christopher Wren, and next in our own day by Messrs. Laing and Tite. After drawing attention to several of the monuments, the rev. gentleman selected a few of the most prominent of the rectors for a series of brief memoirs, and concluded his address with an affectionate and eloquent panegyric on his deceased friend, the late rector.

Mr. T. S. SMITH exhibited and gave explanations respecting a number of ancient books and documents belonging to the church and parish.

In the evening a number of the members and their friends dined at the Bakers' Hall, Mr. Alderman FINNIS in the chair; the entire proceedings of the day having afforded the utmost satisfaction to those present.

WORKS AT THE MANSION-HOUSE.—For some months past works have been in progress at the Mansion-house. They are now executed, at a cost of some £2,000 to the Corporation of London. The fabric, now about 120 years old, was originally designed and completed under the supervision of Dance, and that part of it between the vestibule and the entrance to the Egyptian-hall, now called the Saloon, was a court-yard open at the top to the sky, and that until a period within living memory. Many years ago, however, the Saloon was covered in with a roof with glazed compartments, but this was unsightly, and so low as to detract from the character of the building, with which it had nothing in harmony. The Court of Common Council having voted a sum of about £1,700, a coved ceiling, with panels or compartments of embossed glass, has been thrown over the saloon, supplanting the old flat ceiling, and some ten or 12 feet higher. The vestibule, saloon, and the principal staircase have also undergone a process of embellishment, which for years past had been much wanted. Of these portions of the building, throughout the whole interior, the ceiling and the panelling and niches of the walls have been painted in fawn, white, and grey colours, blended with gilding.

ALLOA.—The present Court House accommodation in Alloa having been considered very inadequate to the requirements of the locality, Sir George Grey, decided, on a report submitted to him by Mr. Mathieson, that additional Court-House accommodation should be provided. A site for the new edifice has been fixed on, and Messrs. Brown and Wardrop, Edinburgh, have been appointed architects of the new edifice.

DEMOLITION OF HUNGERFORD MARKET.

THE demolition of old Hungerford Market, for the formation of the West-end terminus of the Charing-cross Railway, progresses rapidly, and the Swan and Dolphin taverns, facing the river, together with the whole of the fish market, will soon disappear. The works of the Charing-cross Railway are now so far advanced that the directors expect to be able to open the line between the South-Western station in the Waterloo-road and the London-bridge station during the summer. A contemporary note that:—There has been a market, where there will shortly be a railway station, for nearly two hundred years, Hungerford-market having been built in the year 1680. Sir Edward Hungerford, of Farley Castle, Somersetshire, had a large mansion on this spot in the reign of Charles II.; but "the town" in those days was beginning to migrate still further westward. Pall-mall and the streets to the north of Piccadilly were rising, or had just risen, in the outer wilderness; and the Strand, which was the grand aristocratical suburb in the reign of James I., was fast becoming vulgar. Influenced probably by these circumstances, Sir Edward Hungerford pulled down his river-side house, and built several small ones on its site. At the same time appeared the market. It was generally anticipated that the speculation would prove a good one; and there were many reasons why it should do so. The proximity of the place both to the western and eastern suburbs—for ages the great nurseries of fruit and vegetables for metropolitan consumption—and the convenience of the river for conveying the produce from the market gardens of Fulham and Bermondsey, and delivering it at once at the very doors of the vendors, without the necessity of land carriage, pointed to Hungerford as the chief London market for what our forefathers used to call "green meats." But Strype, who in 1720 records these anticipations, at the same time informs us that the project was "balked at first," and had since turned "to little account," Covent-garden having got the start, and being "much resorted unto, and well served with all fruits and herbs, good in their kind." Still, Hungerford-market held on, and early in the reign of William IV. it was rebuilt, when fresh hopes were formed of the figure it would make in the London world. It was to be a dead meat and poultry market, fish market, and a vegetable market; and it was to eclipse its competitors by its manifold advantages. The first stone of the new buildings was laid on the 18th June, 1831, and the market was opened on the 2nd July, 1833. The architect was Mr. Charles Fowler. There seemed to be no reason why the speculation should not succeed; on the contrary, as we have already shown, there were many reasons why it should succeed, and yet it never has. Multitudes of people have passed through it daily for nearly 30 years, on their way to and from the boats, but they have never brought prosperity to the market, and Hungerford has made no progress towards supplanting Covent-garden, Leadenhall, and Billingsgate. In the summer of 1848 a portion of the centre was burnt down, and people said it would be better to sweep the whole away, but the gap was filled up, and the market has almost survived two more apprenticeships. It might fairly have been expected that the opening of the suspension bridge, in April, 1845, would be the forerunner of a better day for the market; but fate had decreed it otherwise. Some evil destiny seems to have hung over the whole locality; the bridge itself never having been popular.

MONUMENTAL BRASSES.

AT the concluding meeting of the Literary and Philosophical Society, Bath, the Rev. THOMAS BLISS read a paper on "Monumental Brasses," and exhibited a number of rubbings lent for the purpose by Mr. C. T. PHIPPS, architect, of Bath.

THE AUTHOR began by comparing brasses with sculptured stone effigies, which, he said, they were probably intended to represent on a flat surface; and being not only less costly, but more durable, they enabled a larger class to commemorate their dead, and thereby transmitted to posterity examples of the costumes of different ranks in society through four successive centuries. Of these memorials nearly 5,000 are still in existence, dating from A.D. 1277 to the close of the seventeenth century. The lecturer then proceeded to illustrate the costumes of the figures delineated on the brasses, commencing with a description of the eucharistic, processional, and academic vestments of ecclesiastics of various orders. He next pointed out successive changes in the armour represented on the military brasses, from the period of complete chain mail, showing the gradual introduction of plate armour, as weapons of offence became more formidable; tracing it, in its various stages, till it reached its perfection in Richard III.'s time; and indicating its gradual modifications, till, ultimately, in the seventeenth century, very few pieces remained of the original panoply,—observing that thus, from early times, that same race has been going on between the arts of defence and destruction, which has led, in our own day, to such revolutions in the construction of guns and ships. Having explained the costumes of civilians, by the numerous rubbings on the walls, Mr. Bliss went on to show the changes which fashion has wrought in ladies' attire—from the graceful dress of the fourteenth century, through the extravagant styles which prevailed in the fifteenth, to the plainer costume of the seventeenth. After referring to the manner in which children are commemorated on brass, he described the foliated and Latin crosses which are occasionally found till the era of the Reformation. The rev. gentleman next directed the attention of the audience to the accessories of the figures, tracing the successive periods of pointed architecture displayed on the canopies, reading many of the inscriptions, and pointing out the transition from the Lombardic to the black-letter, and thence to Roman capitals, and explaining the sacred, heraldic, and trade symbols found on brasses. The lecturer concluded by showing the difference between the manners and customs of the middle ages and those prevailing in our own day, which he illustrated by a description of the residence and daily life of a mediæval knight, and the contrast they present to the luxurious home and refined existence of his descendant in the nineteenth century.

At the conclusion of the paper, the Rev. H. M. SCARTH said that he had had the pleasure of hearing Mr. Haines describe his monumental brasses at Gloucester, during the meeting of the Archaeological Institute in 1860, when he also exhibited his rubbings in the Chapter-house, previous to the publication of his excellent treatise, and he was thankful to say that the subject had now received the attention which it deserved. In respect to the connection of sculpture with monumental brasses, that brasses had originated out of monumental effigies, and become more general in consequence of their being less expensive, Mr. Westmacott, at the same meeting, had very ably illustrated the progress of monumental sculpture from the earliest period of mediæval times to that of the Reformation, and had shown that the decline of the arts, which was generally attributed to the progress of the Reformation, was not due to that cause, but that the decadence could be traced throughout Europe prior to that event, and at a time when opposite principles were at their height. This decline in art was common to sculptures and brasses, which improved or declined together. It was one thing to pore over the pages of a dry record, and another to find a page of history in the dress of every monumental effigy. The dresses of mediæval times gave life to mediæval history. We conjured up the very actors in the scenes of which we read, when we understood the history of their costume; and to the student of archaeology an ancient church, with its monuments, affords a rich treat, and implants a series of historical events in his mind. He desired to give all young persons a taste for these pursuits, because it helped them greatly in the study of history, divesting it of much that was distasteful.

THE ENGLISH SCHOOL OF PAINTING, FROM THE YEAR 1762 TO THE PRESENT TIME.*

IN whatever way, and to whatever extent, the commercial interests of industry may be affected by the International Exhibition, just opened—and commercial interests in the hardest sense of trade, I must observe, appear to be too much the ruling purpose in the carrying out of that gigantic enterprise—however the struggle may end between the decorative furniture of Paris and of London, between the silks of Lyons and of Spitalfields, between the hardware of Sheffield and the imitative products of the Zollverein; however the contest between the pianofortes of Broadwood and Erard may terminate or whatever the verdict of thirsty John Bull upon the cheap thin wines of France, of the Rhenish provinces, or of Hungary, as compared with Alsace's pale ale, or Barclay and Perkins' stout; whatever the revision of æsthetic feeling created more or less in all men's minds by Captain Fowke's monster shed, with its two dish-cover domes, and the cruel ridicule it may bring down upon us from our foreign visitors; there is one feature in the Exhibition which, appealing to the higher intellectual faculties, and the poetic feeling of the community, cannot but be viewed with intense interest by all who look to the cultivation of taste as an essential element of advanced civilization. The Picture-gallery, in which are assembled the choicest works of painting from all parts of Europe, and in which artists and amateurs of all nations will meet to observe, and compare, and exchange experiences and opinions, cannot fail to be of immense importance in promoting the cultivation of art upon broad principles, and in that genuine spirit of eclecticism which springs not from theoretic teaching, but from the conviction of actual eye-proof.

That art, albeit, in its first instincts often a matter of inspiration, is not altogether of spontaneous growth, not intended for selfish isolation in its exercise; that, on the contrary, it is a divine calling, calculated and designed more than any other as a medium for bringing into friendly and improving association, noble suggestions and creative genius of the whole brotherhood engaged in the one common field; and that the most excellent works of the principal schools, and of the principal masters of those schools, have been thus produced after the greatest amount of interchanged experience with other schools and masters, is a fact fully established by the whole progress of the renaissance of art in Italy—the mother of modern art—as well as in the Netherlands, in France, in Spain, in Germany, in England itself, and wherever else the fame and influence of Italian art was acknowledged, and so long as the tendency towards that school predominated. After Italian art experienced its rapid decline, and its supremacy began to give way in proportion, the great original schools of Flanders and Holland, with Rubens and Rembrandt at their head, began to exercise a direct influence upon the arts of other nations; and thus during a period of upwards of two centuries, the schools of Italy and of the Netherlands were recognised as the two universities of art throughout Europe.

These considerations it is most important to bear in mind when reviewing the history of art, as tending to supply the pedigree and account for the traditions of the art of various nations. Their application would be inexhaustible in suggestions of interest, but it would occupy too much time to go into such a study through all its ramifications. It may suffice, therefore, to point to one or two leading facts,—how art in France took Italian art, already at its zenith, and in the very point of its decline, for its model, and wasted its resources in ambitious efforts on tame religious or cold Classic subjects; and after passing through the phase of heroic exaggeration in David and Delacroix, began to take refuge in a laboured imitation of the miniature domestic subjects of the Dutch school;—how art in England took its first suggestions from the great living masters of the Flemish and Dutch schools, and became less ambitious, but more genuine and truthful, than the sister art of France;—how, in after years, towards the end of the last century, the Netherlands being closed against English travellers, Italian travel, and the importation of Italian paintings, changed its direction, and produced a historic school, in which the manner and suggestions of Italian and Netherlandish art were strangely blended,—a hybrid product, which, being little consonant with national feeling and national requirements, was but of short and unprofitable duration;—and how, lastly, in landscape and domestic story-telling subjects, our art finds useful, honourable, and remunerative employment, ministering to the tastes and fancies of all conditions of men. And to conclude with one other instance, we see how Germany, the last to throw off her barbaric, untutored, indigenous art, at the beginning of the present century, flew to Rome, and endeavoured to transplant to her cold northern clime, and amidst her unimpulsive speculative philosophy, the types of the devotional art of Italy in her days of most absorbing religious fervency; and how this ill-advised attempt to resuscitate the art of an age and feeling which had passed away had repudiated by the artists of Northern Germany, who established the school of Düsseldorf, with nature—the nature of external creation as well as of domestic life—for its field.

We have stated that amongst the early schools of art the interchange of experiences and suggestions was very apparent, and attended by mutually beneficial results: we have shown that the old schools of Italy and the Netherlands, thus brought to perfection, became the parent sources from which the principles of the more recent European schools were mostly derived. But here the story of the traditions of art, and the mutual relationship of the schools of art, unfortunately comes to an end. When the primal vigour of the Italian and Netherlandish schools had given way—when their fructifying streams were stopped— and, above all, when the grand religious and historic themes of the former were no longer the staple subjects of the painter's art—the Art-family, losing its common head, and losing every day more and more the ties between its members, became scattered over the face of the earth, every one acting with distinct and independent purpose, without interchange of sympathy, counsel, or experiences. The state of things during this time—namely, dating from the close of the last century—is forcibly and practically put by Dr. Waagen. Speaking of this period (which he puts as the date of the commencement of "original painting in England"), he says—"the original schools of the whole of the modern times of Italy, the Netherlands, and Germany, and their branches in France and Spain, had long lost their peculiar character, and in their stead there had succeeded, all over Europe, a manufacture of cold, monotonous, spiritless pictures, founded on the general rules and precepts of art, which were communicated in the various celebrated academies. The demands of religion, the broad foundation on which, in other schools, historical painting had gradually grown up from its first infancy to vigorous maturity, no longer existed. This highest branch of art was now only occasionally in request for the decoration of palaces and other public buildings; all other demands on living artists were confined to portraits. Even the tradition of the technical part of painting, which had been conscientiously handed down in the old schools of living art as the most indispensable fundamental condition even of the highest performances, had been gradually forgotten, as of inferior importance, amid those dead rules of pure taste and ideal beauty of form." This, in other words, clearly indicates a state of universal anarchy, in the midst of which the practitioner of art appropriated what he fancied, or what first came to hand, of the resources and traditions of art, and applied it after his own fashion, without regard to what had been done before him or what was being done by his neighbours—thus, as it were, beginning the art anew, each in his particular case. How true what Dr. Waagen says as to the loss of the very technic conditions of painting is, will be acknowledged by all who recollect Reynolds's perpetual experimentalising in vehicles, the uncertainty as to Titian's and other great colourists' mode of painting—uncertainty vainly attempted to be resolved by the dissection of some of their pictures, and, alas, by too many tawdry, yet heavy and opaque, canvases which load the walls of contemporary exhibitions.

This is a long exordium *à propos* of the Picture-gallery of the International Exhibition and I may, perhaps, be asked what purpose I had in making it. Simply this; to show that, in the severance of art interests and art experiences which has occurred since the decadence of the great early schools has been our weakness; and that in the association of artist with artist, of school with school, in short, in a union of resource, will be the strength of future art. It is on this account that I hail this International gathering of art, and hope it will be but the commencement of a co-operation and universality of purpose and action amongst artists as boundless as the spirit of art itself.

But the immediate purpose before us this evening is with painting and painters in England from 1760 to the present time; in fact, our art pretensions as a nation, having particular reference to the display made in the International Exhibition. Let us hope that the effect of that display will be to qualify the sentence passed against us a hundred

* Paper read by Mr. HENRY OTTLEY before the Society for the Encouragement of the Fine Arts, Conduit-street, Regent-street, 1st May.

years ago by the Abbé du Bos, Montesquieu, and Winckelmann, and which was greedily accepted throughout Europe, and hitherto has remained on record, without question or appeal—namely, that from "a certain character of heaviness and want of fancy," which those amiable persons deduce from "physical causes," the English people are not capable of cultivating the fine arts with success. Alas! how little hitherto have nations known of one another, except through the agency of war and diplomatic artifice! How little of one another's achievements in the arts of peace! Down to the time of the great International Exhibition at Paris, in 1855, there were but three names of English artists which might be said to enjoy common renown amongst our French neighbours—Reynolds, Landseer, and Martin! and Dr. Waagen, in his work on "Art and Artists in England," originally published in 1835, already referred to, acknowledges to having made his first acquaintance with the artists of the English school through the medium of the few pictures in the Angerstein and Beaumont collections, which formed the nucleus of our National Gallery. He tells us:—"I come at length to the English school. Of its most eminent names the gallery possesses some of the most celebrated works. As I have hitherto known hardly anything of these masters except from engravings, the sight of their pictures was particularly interesting to me. I was thereby induced to form an idea of the peculiarities of the English school of painting, and its relation to other schools, of which I give you some particulars;" and then, upon the evidence of some dozen or so specimens of Hogarth, Reynolds, West, Wilson, Gainsborough, and Wilkie, he pronounces his estimate of the "peculiarities" and pretensions of our school of painting, overlooking Northcote, Opie, Fuseli, Haydon, Hilton, Mortimer, Eddy, Crome, Constable, Nasmyth, Lawrence, and a host of others, who have each contributed their pabulum to the general fund, but whom, perhaps, he had never heard of as "masters" of the English school. Of Turner, in another part of his work, he speaks as "this spirited painter, who is so great a favourite with the English;" and then goes on to make small account of his celebrated sea-piece in the Bridgewater Gallery, painted in emulation of Van der Velde, as "a successful piece of scene painting," remarking that "the great crowd of amateurs, who ask nothing more of art, will always prefer Turner's picture;" and, in another place, he again makes passing mention of Mr. Ruskin's idol in these terms:—"I made a point of looking for the landscapes of the favourite painter Turner, who is known throughout Europe by his numerous, often very clever, compositions for annuals and other books, where they appear in beautiful steel engravings," and then gives him another set down, declaring that on looking at the Ehrenbreitstein, and the Burning of the Houses of Parliament, he could scarcely trust his eyes, discovering in them "such a looseness of treatment, such a total want of truth, as I have never before met with." Who shall decide, when doctors—such doctors as Waagen and Ruskin—disagree? Let us accept, at any rate, as an advantageous and happy event, any arrangement which shall bring general opinion to bear upon questions of this kind, and to afford opportunities of comparison between the most esteemed performances of the several contemporary schools.

It has been a fancy with some persons to place Hogarth as the founder of the English school of painting. But this was a mistake: Hogarth presented one of those rare instances of superior genius which attained the highest pinnacle of excellence and renown without aid or instruction from any one; and as he was entirely self-created and self-taught, so he had no pupils and left no followers,—saving, perhaps, slightly and indirectly, in the caricatures of Gilray and Bunberry. The true founder of the English school was undoubtedly Reynolds, with word homage of Michel Angelo and practical imitation of Rembrandt, in whose mystic chiaroscuro he sought to conceal his want of drawing. This style was directly followed by Northcote, Opie and others, but with less transparency in their gloom, and no improvement upon his unhappy mixture of pigments and vehicles, which often resulted in fearful chasms and accumulating *débris*, as of the lava of Vesuvius in their works, as it did in so many of his also. Reynolds was very secret and mysterious in the experiments he tried with these vehicles—perhaps, fortunately so—though his conduct here is strongly illustrative of the illiberal spirit which characterised the great founder of our school. And, in further illustration of this tendency, I may mention the anecdote of the way in which he received an application from a young student, who was about to compete for the Academy prize medal, and brought several designs he had made for the purpose, in the hope of obtaining the President's opinion as to which was the best in point of sentiment and most descriptive of the story represented. Reynolds's reply was—"You may choose whichever you please, it will turn out precisely the same: you are to recollect that your picture is to be judged of by painters only. It will be the manual execution of the work, and that alone, which will engross the attention of artists, and the degree of merit displayed in that part of the art is what will determine them in their election of the candidate for the prize." Such the idea of the province of the teacher in art—to instruct and to encourage, entertained by the first President of the Royal Academy!

It is an unavoidable necessity that, in treating of painting and painters in England during the past century, we must make reference, more or less in extent, to the Royal Academy. A strange misgiving—an irresistible repression of noble aspirations, comes over us as we name that institution, accompanied by cold visions of red tape and scarlet-collared royal liveries, greasy fumes of soup, and ominous clink of the gold chain of Bumbledom. It is not my intention, however, to go into the origin and history of that aristocratic monopoly—how it owed its establishment to a secret cabal amongst certain disaffected members of an independent society of artists, and how, rising upon their ruin, it has paralysed all independent action in artists, as a body, since. Nor will we inquire into the question of its financial position: the large income it derives from an exhibition of pictures, nine-tenths of which are painted by men who, not belonging to the Academy, have no participation in the proceeds, and the manner in which that income is appropriated; nor, lastly, will we examine into the tenure by the Academy of premises belonging to the public. All these are questions which have been often argued, and will be argued again and again, but which we have not time to enter upon at present. I propose, however, with your permission, to say a few words about the Academy—first, as the fountain of honours in art; and, secondly, as an educational establishment.

And, first, of the Academy and its dispensation of diplomas of honour. Putting aside all consideration of the self-selective principle, and the arbitrary mode in which the Academy is constituted, we cannot but be struck with the inelastic character of the institution itself. Rightly to understand this, we must consider the number of artists and the standard of art in 1768, as compared with what they have attained since, and the extent to which the arts are cultivated amongst the community. A hundred years ago there was no patronage for the limner's art, except when employed in portrait painting, or sign painting, or carriage painting. There being no public exhibitions, the few insane enthusiasts who tried their fortunes in history or landscape were beholden to some neighbouring shopkeeper for the exposure of their works in his window, and when a sale was effected were glad to receive whatever the tradesman thought proper to give out of the proceeds; the latter, by the way, invariably concealing the name and residence of the artist from the purchaser, for fear of establishing direct dealings between artist and patron, and thereby sacrificing his profits as middle man. Then, to crown all, we had a German king impervious to all generous or ennobling sentiment, who boasted that he "hated poetry and painting," and a court as rude and barbarous in feeling as their chief; and can we wonder that artists were few, and held of little account, in those days?

When, therefore, under those circumstances, George III. fixed the number of Academicians at forty "men of fair moral characters and high reputation in their several professions," the allowance may be considered a pretty liberal one, and it was probably intended in that spirit, and as calculated to comprise all artists of real proficiency then existing, "not being members of any other society of artists established in London." Indeed, at first starting, the number was found more than enough—more than could be filled consistently with the purposes with which the Academy was established, as appears evident from the fact that the original members nominated in "the instrument" of foundation only amounted to thirty-six in number, of whom two were women—Angelica Kauffman and Mrs. Moser, and looking over this list, how many do we find who did nothing which either illustrated their own names at the time, or which has descended to posterity? The walls of the Picture-gallery in the International Exhibition will afford but too convincing proof of the weakness of the Academy in its earlier days; whilst in its later days it cannot but give evidence of experiencing a pretty strong competition from "outside" men. Of the thirty-five artists of "high reputation in their several professions" constituting the Academy in 1768, when we have made exception of Reynolds, Gainsborough, Wilson, West, Zuccharelli, and Paul Sandley in painting, and Chambers in architecture, what name do we find which

is even remembered by any tradition of honourable achievement in art? Let us pass a few of them in review. There was Michael Moser, a native of Switzerland, gold chaser by profession, who afterwards took to painting in enamel, and, on account of his supposed profound knowledge of the human figure, was appointed keeper of the Academy. There was Mary Moser, the daughter of the above, who was a painter of flowers. Then we find Francis Milson Newton, a portrait painter, appointed secretary (and who, in that capacity, wrote a stiff letter to James Barry, notifying his expulsion from the academy for *disrespect* against his brother members). Next comes Edward Penny, who had been a pupil of Hudson, and chiefly employed himself in painting small portraits in oil, but occasionally indulged in historical and fancy subjects, as "The Death of Wolfe," "The Marquis of Granby relieving a sick Soldier," "Virtue Rewarded," and "Profligacy Punished," which, though engraved, I do not recollect having had the pleasure of meeting with. This eminent man was appointed professor of painting. Next appears Samuel Wale, who designed book-illustrations, long since forgotten, and sign-boards, one of which, a large whole-length of Shakspeare, for many years decorated the doorway of a public-house at the corner of Little Russell-street, Covent-garden; he was appointed Professor of Perspective. Francis Hayman, another book-illustrator, is spoken of somewhere as "the most respectable historical painter of his day," in which capacity, however, we are told that he was "principally known by the pictures he painted for Vauxhall." These pictures, four in number, were illustrative of scenes in Shakspeare, and were so highly prized by the proprietor of that once fashionable resort, that he caused copies to be substituted for the originals, which he removed elsewhere. One might be curious to know where they now "blush unseen." Cipriani was a painter of pretty sentimental platitudes, well fitted to hang as pendants to those of his female compeer Angelica Kauffman. Domenico Serres was a painter of marine landscapes and sea-fights, which, we are told, "as artistic works, are of little value." Then we have Jeremiah Meyer, a miniature painter; Peter Toms, drapery painter to Reynolds; Francis Cotes, portrait painter; John Baker, flower painter; Nathaniel Dance, pupil of Hayman, who painted history, portrait, and landscape with equal success and distinction, and fortunately retired from the practice of the arts on coming into a baronetcy and a fortune; William Tyler, Agostino Carlini, Charles Catton, John Gwynn, John Richards, and Richard Yeo, about neither of whom is anything noteworthy known; and, to conclude, Joseph Wilton, the sculptor, whose genius was honourably acknowledged by the illustrious founder of the Academy, by his appointment as State Coach Carver to his Majesty.

Let no one disturb the honours lavished upon these illustrious names! But, at the same time, may it not be permitted us to suggest whether, if their merits were considered the standard of eligibility to the Royal Academy, the number of members might not now be somewhat extended? and, apart from the abstract justice and consistency of so doing, might not a liberal infusion of new blood be advantageous to the Academy itself, at a time when we find so many of its members almost past work; whilst one or two others, doubtless with the soundest possible commercial principles in view, prefer exhibiting elsewhere than at the Academy, for the pecuniary gain of themselves and of the traffickers in art with whom they have allied themselves? This sort of proceeding, by the way, appears to be clearly at variance with the spirit and intention of the original "instrument," which provides that "all academicians, till they have attained the age of sixty, shall be obliged to exhibit at least one performance, under a penalty of five pounds, to be paid into the treasury," and also with one of the bye-laws, which excludes from claim upon the funds of the Academy those who, during two consecutive years, shall omit to exhibit; and still further with another law, which excludes from competition for the honours of the Academy those who exhibit with other exhibiting societies. But it is beneath the dignity of art to pursue this question, in the mere sense of one of pounds, shillings, and pence, further.

A more important consideration is as to what the Royal Academy has done in the way of instruction in art, and whether the system upon which its teaching is given is the best that could be adopted for the purpose. I will not here go into the general question as to the efficacy of academic teaching, which has been so much discussed, and upon which Fuseli, Waagen, and other respectable authorities have pronounced in the negative; I will simply beg to direct attention to the mode and amount of tuition afforded by our Academy and to its fruits—what valuable principles it has established, what great artists it has produced.

With respect to the machinery of education employed. It is an old maxim, one, indeed, established upon scriptural authority, that the labourer is worthy of his hire, and experience tells us that the value of service rendered is very generally in proportion to the amount of remuneration accorded. We all know the story of the lawyer, who, having been inveigled into giving an after-dinner opinion to a friend, which opinion led to fatal and costly disappointment in the courts of law, when remonstrated with on the subject by the latter, inquired, "What did you pay me for my opinion?" and being answered "Nothing," replied, "Then, that is about what it was worth!" Now, it is not exactly the case that all the duty of instruction at the Royal Academy is done gratuitously; the keeper receives £100 a year, and the several professors £60 for delivering six lectures in each session; and the nine visitors, elected annually from amongst the academicians to attend the schools by rotation, each a month, "to set the figure, to examine the performances of the students, to advise and instruct them, to endeavour to form their taste, &c." receive "10s. 6d. for each time of attending, which shall be at least two hours." Now, no one can say that these emoluments are to be characterised as munificent. On the contrary, few will deny that, considering the value of money, and of time, which is money at the present day, they are simply ridiculous, and that the utmost amount of "advice and instruction," which the students have a right to expect in return, must be of that negative character which Reynolds gave the innocent youth who ventured to consult him upon the relative merits of different modes of treatment he had prepared for a prize subject—"whichever you please, my little dear!" Instruction in the classics, in law, in divinity, in music, in other accomplishments, is liberally paid for—why not that in the arts of design? Dr. Waagen, to note his authority again as a practical man, and fully experienced in the system of art-education adopted abroad, soon saw through our weak point in this respect, and expressed it in plain set terms which it is impossible to resist. After suggesting the necessity of Government interference in the matter of education in certain cases, he says:—"Thus, for instance, the Royal Academy of Arts is, in fact, only a private association of artists, who have nothing from the State but apartments, the titles of president, professor, &c., and permission to make an annual exhibition. Under such circumstances, especially in a country like England where everybody's time is so valuable, no great expenditure of time or labour can be expected from the members. The necessary consequence is that the Academy, as the highest institution for giving instruction in architecture, sculpture, and painting, must very inadequately accomplish that important object. In the most favourable cases, the five professors who have to give instruction in anatomy, perspective, architecture, sculpture, and painting, deliver six lectures in the course of a whole year. But it has happened that only three or four have been delivered, and even, in the case of the death of a professor, a whole year has passed without a lecture." He might have added that in the case of perspective, of which Turner was professor, years passed without any lecture at all; and he goes on to state that, in respect to architecture it happened that from 1824 to 1830, that is, for six entire years no lectures were delivered," which circumstance actually led to the foundation of the Society of British Architects in 1835. Of the general results of such miscellaneous and eleemosynary instruction, Dr. Waagen goes on to observe:—"But if such an institution is really to produce any effectual good, a thorough course of instruction, returning in regular and uninterrupted successions, is indispensable. This want, which has not hitherto been compensated in England, either by restoring the ancient relations between masters and scholars, or by the opening of ateliers, partly accounts for the dilettante-like irregular character of so many productions of all the three arts."

So much for the technical element; now for the intellectual,—supposing for the moment that in our modern philosophy intellectually be considered desirable in connection with the arts of design—which, by the way, judging from actual experience, one might be very much inclined to doubt,—but however this may be, it is a fact that in the whole constitution of the Academy there is no provision made to improve, advise, or assist the student in matters ordinarily understood as entering into a liberal education; and considering that art gifts have very generally been found to fall to the lot of youths who, from their position, or the circumstances of their families, have had but moderate advantages of education, the omission cannot but be regretted as of fatal import. Da Vinci, Michel Angelo, Raffaele, the Carracci, Salvator Rosa, and numberless others of the great masters o

old, were men nobly gifted in every refining art and taste, and highly educated in every branch of intellectual culture. Hence the supremacy of their works, and the persuasive force of their teaching. In the English Academy of Arts there is no professor of poetry or music; and the professors of ancient and modern history are honorary sinecures. Hence the paucity and poverty of idea under which our artists too often labour, and the small and unworthy manner in which they too generally treat a great subject when they attempt it.

It is a singular fact, and one very suggestive as to the value of our Academic teaching, as far as it goes, that it is precisely in landscape, in which the "Forty" do not condescend to give any regular instruction, that the art of England has made the most distinguished figure; constituting, indeed, a school which is without a rival in the world.

It would be impossible, in a discourse like the present, to attempt to pass in review, individually, even the most prominent artists of our school. The observations I have ventured to make have been of a general tendency, applying to matters of principle, and the very few examples of artists which I shall now refer to will be selected chiefly on account of their illustrating the working of our schools, or some other principle bearing upon the promotion and encouragement of art in this country.

Suppose, in answer to the question what has Academy teaching done for art, what great names has it turned out? we take the names of Turner and Etty, the two great masters of colour—the one in landscape, the other as applied to the figure. With respect to Turner, Mr. Ruskin assures us, that whatever excellence he attained to was not acquired from the teaching of the Academy, but rather in spite of it. One thing is certain, that there was nothing in the Academy, or the Academy teaching, which inspired him with respect for high principles in art; nothing which guided or restrained his hand, or he would not have gone on experimentalising, often as in the dark, darkly, and falling into extravagance and error, as he continually did to the end of his life. If in his youth he had found himself under a great master, whom he could have looked up to and deferred to, he would have become the greatest landscapist that ever lived; as it was, he found himself possessed of enormous natural gifts, which were not turned to the best account.

And what did Etty gain from his unremitting study at the Academy, from the first day of his admission as a student till within a few months of his death? Simply to paint from the model; his pictures being little else than Academy studies. Etty, like Turner, was egotistical, and had little veneration for any art but his own; hence he never went beyond his own narrow sphere, and the teaching at the Academy supplied few incentives to him to do so. When he went to Italy in 1816 he seems to have been inspired with little or no feeling for the great masters in painting, or for the localities hallowed to posterity by their names. Florence, to him, was "a gloomy city;" he "began to draw in the gallery" there, but "could not get on;" and the same at Milan, Bologna, and other places. A few years later he renews his travels and goes to Rome, "where," his biographer tells us, "the Raffaels of the Vatican, and other world-wonders were, under the skilful guidance of a friend, swiftly inspected." "Twice as much," he writes himself, "as I should have done alone; seen at the cost of some exhaustion and much running about." With a natural tendency solely to that which is sensuous in art, which his education at the Academy had in no respect served to qualify by the mixture of higher aims, he declares Venice to be the "best school for the painter;" and though he could see little to arrest him in the sublime creations of Michel Angelo and Raffaele, he is fervent in his admiration of Giulio Romano's mythological subjects. One passage, in a letter to Sir Thomas Lawrence, places the art-tendencies of the man strikingly before us, and fully justifies what I have said of him. "That Chamber of Psyche," he exclaims, "how novel, classical; every way extraordinary! It is a treat to find a series of pictures that handles classical subjects in so learned and antique a style, after being deluged with saints, martyrs, and Virgin Marys by thousands. The imagination revels in his poetic landscapes. His giants intimidate; his females, though voluptuous in the extreme, have an air of greatness truly Roman."

Stothard, who started in his artistic career self-taught, and cramped his style by drawing patterns for brocading silks and book illustrations, obtained nothing from the teaching of the Academy to induce him to adopt a broader and nobler style, and the consequence was that, always charming for his elegance of sentiment and gracefulness of pencil, he remained, in subject and in treatment, small and weak—"cribbed, cabined, and confined"—to the last.

Wilkie owed nothing to the teaching of the Royal Academy, for he came to London at the age of twenty with his style ready-made and his fame secure, exhibiting his "Village Politicians" and the "Blind Fiddler" successively in the two following years. The Hogarth of comedy and domestic life, it had been well if he had been permitted to indulge his pencil in congenial subjects to the end of his career, but tyrant patronage stepped in to direct his splendid genius to labour utterly unworthy of him. Appointed principal painter in ordinary by George IV., and afterwards by William IV., portraiture became his bitter doom, and he died at sea on his return from an expedition to Constantinople, to paint the interesting features of the Sultan.

To come to a close, Leslie tells us, in his autobiography, that in the year 1822 Constable wrote as follows:—"The art will go out. There will be no genuine painting in England in thirty years;" adding—that is, Leslie—"and it is remarkable that within a few months of the date thus specified, Turner should have died, almost literally fulfilling, as some of his admirers may think, Constable's prophecy." This is a view of the matter taken from a strictly academic point of sight. Leslie's powers, never of the most robust kind, were at the time he wrote thus, visibly and hopelessly on the wane; and the ranks of the Academy presented many an illustrious veteran to whom the same remark would apply. But the autobiographer appears to have overlooked the fact that since Constable wrote—aye, whilst he himself was annotating what he had written—a new and enterprising band of artists was pressing forward to occupy and improve the ground which the Academy had so long unprofitably occupied and culpably neglected. Of the performances of this body, which, for some unaccountable reason, has been nicknamed "Pre-Raffaellite," it is not my intention to discuss the merit at present; time would not allow it. I may observe, however, that they have certainly done much to counteract the old tendency to looseness and carelessness of execution, which, from the time of Reynolds downwards, has been too fatally prominent in our school of painting, and that their exertions, qualified by moderation and directed by sound judgment, cannot fail to exercise a considerable improving influence upon the performances of British art. All that will then be wanted will be to apply the art to nobler and more elevated themes than at present too generally occupy it—a result which must mainly depend upon the creation of an improved taste amongst the public, who regulate the market which the artist has to supply, and the friendly interchange of sympathies between artists of all schools and nations.

INVENTORS' INSTITUTE.—A preliminary meeting of inventors and others interested in patent property has been held at 26, Great George-street, Westminster, and an association, to be called the "Inventors' Institute," was formed for the following objects:—To unite and organise the influence of inventors and patentees; to facilitate the progress of science in connection with inventions; to obtain a simple and efficient administration of the Patent Law, and generally to protect the rights and promote the interests of inventors. It was determined that the subscription of an annual member should be one guinea per annum, and that the payment for becoming a life member should be ten guineas. A provisional committee was appointed, of which Mr. Robert Richardson, C.E., was elected the Chairman, and arrangements were made for shortly convening a public meeting to further the interests of the Institute.

SANITARY.—A deputation from the Metropolitan Association of Medical Officers of Health has had an interview with Secretary Sir George Grey, at the Home-office. The deputation brought under the notice of Sir George Grey certain defects in the sanitary provisions of the Metropolitan Local Management Amendment Act, relating especially to the space at the rear of new buildings and the removal of manure.

THE VARIOUS SYSTEMS OF COLOURED DECORATION OF THE MIDDLE AGES.*

I MUST confess the subject under consideration to have been so often treated, and by such able hands, that I feel almost ashamed to take it up; however, so little has actually been done, and that little is so unsatisfactory, that I conceive the cause of polychromy will be all the better for being ventilated as often as possible. I therefore propose to confine myself to the best period of art, viz., the thirteenth century; to relate what little I have been enabled to observe by careful investigation; and, lastly, to give a few reasons why our present mural decoration is in so unsatisfactory a state.

If any one reads the very admirable series of extracts from the liberato and close rolls of the reign of Henry III., published in "Parker's Domestic Architecture," he will see that nearly every room had some kind or other of painting on its walls. It is very true that this painting ranged from red lines imitating stone joints upon a white ground up to the more gorgeous work blazoning with purple, gold, and azure, in the celebrated Painted Chamber; but, homely as much of it must have been, it was infinitely more durable and more artistic than the wretched paperhangings, in company with which we are condemned to pass our lives. Henry III., who, indeed, was the only one of all our rulers, with, perhaps, the exception of Charles I., who ever had the least appreciation of the fine arts—appears to have taken the most lively interest in the decoration of his palaces. We find him continually choosing the subjects of the paintings both on the walls and on the windows, and stating how some were to be executed in fine and exquisite colours, while others were to be done decently without gold and azure. The king, indeed, does not appear to have been exempt from that irritability said to be the fate of all lovers of the fine arts, for on one occasion a certain sheriff is ordered to get some work done as he values his life and chattels, and at another no less a person than Edward Fitz Otho is commanded to cause a certain passage to be made as he would avoid the ire and indignation of the king.

Unfortunately, almost all of the palaces mentioned in these records have long ceased to exist.—Kennington, Clarendon, Epsom, Gillingham, and many others, are all gone, and the great hall at Winchester is almost the only remnant of the royal magnificence of the rival of St. Louis. But the generation which is now passing away has had a greater privilege than we have, for they have seen the great historiated chamber at Westminster with their mortal eyes, while we are fain content ourselves with the plates in the *Vetusta Monumenta*, which, however accurate they may be, can convey but a shadow of the wonderful richness of the original.

From all these accounts it would appear that every building, as soon as it was finished and sufficiently dry, had some sort of decoration applied to it, exactly as we now put on a paper; and could we at the present day get rid of these latter abominations, it is very probable that our whole art would take a corresponding advance.

Now, let us suppose ourselves in the thirteenth century, and, in the first place, let our building be a very common one—say an ordinary village church; well, the walls have been allowed to dry, and the whitewasher has been sent for, who has covered the whole surface with a coating of *gesso*, most probably whitening mixed with a little size. [In our churches the face of the stone dressings are on a level with the rubble wall in the interior; these latter are dubbed out with coarse plaster to bring them to a face.] Now the whitewashing *gesso* is about one-eighth of an inch thick, but when he comes to the stonework he edges it off to nothing, contenting himself with covering the stone with the slightest possible wash, so as to make the colour of the whole uniform; that is, he did not leave the stone uncoloured, as we do in these days, as if it were something to be proud of, because it costs more than rubble; on the contrary, he viewed it simply as part of the construction and went over it accordingly. [As a general rule, all stone used in the interior of a domestic building should be painted, as it otherwise is apt to catch the dust and get dirty.] The next thing was to make a bargain with the painter, who was, most probably, a peripatetic artist travelling from place to place with his pattern-book, containing drawings of the histories of the more favourite saints. The subjects having been selected, this gentleman sets to work, by drawing in the outlines with red ochre mixed with a little black. His palette of colours was of the most restricted description, containing simply yellow ochre, red ochre, black, and white; sometimes, indeed, there are traces of what appears to be red lead, but it is almost impossible to be quite sure. With these colours he filled in his outlines, carefully breaking up and shading each tint; the ground was generally left white, but occasionally it was yellow, while a couple of lines separated one row of paintings from another. Several subjects, when occurring on the same row, were seldom separated, but followed one another as in a frieze. Now it is by no means a very easy thing to paint a series of historical subjects in four colours, viz.—red, yellow, black, and white; and very considerable practice must have been required before the artist learned to balance them properly. I tried, the other day, to do a subject in this manner, and the result was that I tore up my work in great dissatisfaction. However, for the benefit of others, I will venture to repeat here a few notes I made of some very perfect mural paintings of this kind lately discovered at Charlge Church, near Oxford, and which have been published in the "Archæologia."

Flesh.—The ground is red ochre, mixed with white, until it became very light.—Indeed, in some cases, as in the figure of St. Helena, the face would appear to have been left white designedly. A little red was used for the cheeks and mouth; the outlines of the features in red lines, as usual; pupils of eyes light black or slate colour. *Hair.*—Yellow ochre, worked over with red lines. *Black Drapery.*—The lamp-black was mixed with white until it became slate colour, and the lines of the drapery put in with white. In some cases, it would appear that the slate-coloured drapery was shaded with black mixed with red. Black is also used in two distinct ways, viz., first, as black, with very little white; and, secondly, as slate colour—i.e., with a great deal of white; but the latter was by far the more usual, as the dark black would have been too prominent, and have made patches in the composition. *White Drapery.*—The white drapery has the usual red lines, and is sometimes shaded with very light red. Occasionally it was left quite plain, with little or no shading; but then its under side is painted of a very light red colour, giving the same effect as a general shading, more especially when the drapery is rather complex. *Yellow Drapery.*—Yellow ochre, with red lines, and apparently shaded with white. *Red Drapery.*—Some draperies have light red ground, red lines, and white high lights. It is probable that the pure red drapery had white high lights, and either white or black lines. Occasionally it would appear to have been shaded with yellow.

The mouldings and architectural accessories, which are generally very plain in the inside of a common village church, received a decoration of stars or some other very simple ornament. Sometimes, indeed, a still more inexpensive decoration was adopted, viz., the walls were covered all over with a pattern resembling the joints of brick or stone work; an ornamental border would run along the top as a sort of cornice, while the bottom would often be painted with a rude imitation of a curtain. In this case the arches would have red lines to represent the joints, totally irrespective of the real ones beneath the *gesso*, and if these imitation voussours were large, and there were no mouldings to break up the surface, some ornament, such as a rose or fleur-de-lis, was inserted. I should also mention that solidity was obtained by making the ground of the curtain a whole colour, such as yellow or red, and we shall see this practice of getting a fully coloured base still further carried out in the decoration of larger and more important buildings. The most perfect system of this decoration by means of red lines only occurs in the little church of Molinot, near Rouen, but, unfortunately, it has been partly restored; another very perfect specimen is in the upper part of a house at Laon; but, indeed, it is found almost everywhere, and no decoration is more common. There are almost infinite varieties of this imitation stonework draper; sometimes the upright lines become small pillars; sometimes all the lines are doubled; sometimes one corner is cut off and filled with colour; and sometimes roses or other ornaments are placed in the centres of the stones.

As to the more artistic figure-work in the four colours, nearly every church, exhibiting work of the thirteenth or fourteenth century, presents us with some remains wherever the whitewash has been removed. Unfortunately, as these paintings were simply in *tempera*, i.e., in colours mixed with glue or size, the removal of the whitewash has also entailed the removal of the high lights and more delicate portions of the painting, to say nothing of what might have been their condition before the application of the whitewash in Queen Elizabeth's days; for we do know that Henry III. was continually ordering paintings to be repaired, which certainly does not say much for their solidity. It strikes me that it is much to be desired that some church, or churches—for the same cartoons, or studies, could

be used several times—should be treated in this manner. At present, we have no *riu media*: we either do nothing at all, or else do most highly-finished paintings, such as those in All Saints', Margaret-street, Mr. Parry's church at Highnam, and the roof at Ely. I have not mentioned the wretched texts upon zinc, or the wretched unmeaning ornaments in which some churches rejoice; for they are simply not art, and the sooner they are put down the better. What I want to see is a church painted right through in three or four simple colours, such as I have been describing, or in the style of Queen Marie's Psalter, where the outlines are done in black, and the shades of the draperies put in with murrey, purple, and green, the carnations and hair being touched in with brown.

Another simple way would be to work in what is called *grisaille* or *camien*, like Paolo Uccello did. Here everything is shaded in *terre verte* except the faces, which are like nature; the background being blue.

Now any of these ways would very much simplify the work, to say nothing of the saving made by using the cartoons over again in a more distant part of the country.

As to artists, of course one would not expect to get Academicians, but there are numbers of young painters who would be but too glad to exercise their talents in so useful and legitimate a manner, instead of trusting the labours of the whole year to the tender mercies of hanging committees and picture-dealers. I am convinced that the project is a sensible one, and one which will, sooner or later, be carried out.

We now come to the second or fully-coloured system of decoration, and here we divide into two distinct schools,—namely, the northern and southern. In the north we find deeply-cut mouldings and large windows filled with stained glass; the decoration in this case being confined to the lower arcade and to various portions of the vaulting. In the south, on the contrary, the windows are small and rarely filled with stained glass, while the arches are unadorned, and the wall surfaces broad, so as to present plenty of room for figure subjects. In this distinguishing between the north and south, I do not mean for a moment to say that these distinctions are invariable, for moulded buildings are found in Italy, such as the Cathedral at Florence, where all the decoration depends on the stained glass, the most beautiful in the world; or, again, that entire churches were not covered with paintings in the north, as Albi Cathedral. Still, as a general rule, I consider the distinction does hold good, and if you go in for mouldings, you must give up, to a very great degree, that wonderful effect produced by the walls being covered by a vast number of figures.

The worst result of all is, as usual, where a compromise has been effected, and of this the Sainte Chapelle is the worst example. The arcade below is all right; the windows are all right; but the pillars and the vaulting are all wrong. Had the former been marble, and had the latter been painted in a bolder manner, the effect would have probably been all right; but, as it is, the disjuncts on the pillars kill the statues, which are also coloured; and the roof looks as bad, with the little, diminutive stars, as it possibly can. Had Giotto been employed here, he would have certainly had the blue ground and the gold stars, but he would have also had the sun, the planets, the signs of the zodiac, and the labours of the year, for Giotto could not only paint but he could think, and could tell pleasant stories, and was, moreover, the friend of Italy's greatest poet.

But to return to our subject: small buildings in every country were often covered with richly-coloured paintings, such as are described in Henry III.'s orders to be done with good and exquisite colours. The Painted Chamber was an example of this: the walls appear to have been divided into a series of lands, one above the other, the upper ones being very much higher than the lower, so as to allow for perspective. These lands were filled in with histories of the Old Testament, done in very bright colours heightened with gold ornaments, the latter being burnished. I do not know whether they were worked on a raised ground, like those at St. Stephen's Chapel, but they would almost appear to be so from the drawings of the late Mr. Crocker. [Two original sets of drawings were made from the Painted Chamber—one by Stodhart, published in the *Vetusta Monumenta*, and another by the late Mr. Crocker for Sir G. Page Turner.] The paintings did not come down to the ground, but were finished in the usual manner, with a green curtain powdered with gold stars; and here the records furnish us with the information that the said green curtain was an afterthought, for it took the place of certain panels containing the species and figures of lions, birds, and other beasts, thus showing that they made mistakes just in the same manner as we do in the present day. In all probability they found out that the beasts, &c., were *de trop*, and spoiled the effect of the Great History, as it is called, above. The only way in which the two could have been reconciled would have been to have painted the panels and the animals in *grisaille*, like Giotto did in the chapel at Padua. The ceiling of the Painted Chamber was boarded and powdered with little quatrefoils containing heads. Now in the records we continually come upon notices of *wainscoting*, which was generally green with gold stars, but sometimes had borders, and occasionally circles with histories, and I very much suspect that this *wainscoting* referred to the boarding of the ceiling, and not to what we call *wainscoting* or a dado.

When, however, it was a larger building, such as a chapter-house or great chapel, the system was this: the arcade which ran round the bottom was highly coloured, that is, every portion was covered with some colour or other, but in every case a large quantity of gold was used, more especially in the prominent mouldings and foliage. At Salisbury chapter-house there are two prominent mouldings; one was gilt and the other was coloured a bluish green, but powdered with gold lions and *fleur-de-lis*, &c., so as to make a distinction; the hollows of these mouldings were coloured blue or black, and sometimes red. The shafts and bases were of marble; and, indeed, small shafts should almost always be of this material, as I scarcely ever remember seeing a painted one look well. This appears to have been well known anciently, for Henry III. directs the pillars of one of his halls to be painted like marble. The spaces under the arcades were generally painted with an imitation certain, as at Salisbury and St. Stephen's Chapel, Westminster, where, however, it was held up by angels. In the Lady Chapel, at Ely, it is simply coloured, and powdered with gold ornaments. The spandrels of the arcades were generally filled with sculptured groups; these were highly coloured and gilt, *i.e.*, a great deal of gold and a good deal of white, tinted and powdered with other colours, was used to detach them from the ground, which was a simple and rather dark colour, such as blue or red. Above this line of rich colour comes the windows and their vaulting shafts. These are of marble at Salisbury, and were at St. Stephen's Chapel. I am sorry to say were, for St. Stephen's Chapel ought to have been standing now, more glorious than ever. At St. Stephen's the shafts were Purbeck, but powdered with raised gold ornaments. About the middle of their height rose a coloured figure and canopy. At Ely there were a series of niches left white, but with coloured figures and coloured backgrounds. Between these piers are the windows; in all English examples the mullions are left white. Mr. Poynter, who had the advantage of viewing the Ste. Chapelle before the restorations, assures us that in that building they were coloured chocolate.

At Salisbury the glass was *grisaille* with coloured borders. At Ely all has been destroyed, except some canopies, but it is just probable that the figures might also have been in *grisaille*. Of St. Stephen's Chapel we know nothing. As to the vaulting at Salisbury, the ribs have very little colour on their fillets, and a very slight border on either side, but round the gilt bosses and at every angle of the vaulting are a series of ornaments on a chocolate ground; the colours used are yellow ochre, verditer green, and lake, but no blue or azure; the mass of the vault is covered with the imitation stone pattern. At Ely the vaulting is powdered with red roses. We know nothing of St. Stephen's, but most probably it had a flat roof, as there is very good reason for believing that there was another chapel over it, making, with the crypt, three chapels, one over the other.

Such was the general arrangement of colour in large buildings—*i.e.*, very bright at the arcade, and dying out at the roof. In great cathedrals the architects generally contented themselves with accentuating the hollows of the mouldings with red; gilding and picking out with red the caps, and occasionally the string-courses, while blank spandrels were sometimes filled with figures. As to the vaulting, the bosses were gilt and coloured, and occasionally a band on either side of the rib; or the rib is coloured and gilt for the distance of a foot from the bosses, as at Chartres. At Westminster there are gold bands on either side of the ribs, but the ornaments on them are certainly of the time of Sir Christopher Wren: but I have very great suspicions of all white and gold, which was the fashionable mode of colouring in his time, and, indeed, in our own—it is so safe. What I mean is that I do not think in the thirteenth century they would have placed gold on the stone without some coloured border or fillet, and I am the more convinced of this, as a careful inspection of the old roof-

screen at Salisbury, which is now coloured white and gold, disclosed the old colours underneath; the said white and gold being due to our friend, the architect of St. Paul's.

Before going to the south, I should say one word about roofs. The early roofs, as every one knows, were of a very high pitch, single framed, and boarded either to the tie-beam or to a very low collar. In our own country, Peterborough is the only church which possesses the original colouring; it may briefly be described as an imitation of a mosaic in black and white, the middle of the panels being filled with paintings. The subjects originally represented the planets and the Host of Heaven, but a restoration taking place in the fourteenth century, a number of bishops and kings were interpolated, and it is now nothing but a jumble. Afterwards the roofs lost their low collars, and were framed as half-octagons or half-decagons. A common way was to place mouldings on the boarding so as to divide the whole into a series of square panels, or sometimes ribs were nailed on in an awkward way as if it were vaulting, as at Trumpington, Cambridge. It is easy to suggest ways in which roofs of this description might be decorated, but I confess that I do not know any one of ancient authority—at least as old as the thirteenth century. If without ribs, they might be treated like the walls of the Painted Chamber, or with a series of histories or processions; or they might be painted blue, with gold stars interspersed with great circles containing stories or figures; but I have a strong idea that the ground of a good many ceilings was white, and that they were treated very much the same as the vaulting. The great halls, most probably, had their roofs unboarded, as we find Henry III. directing sundry of them to have the roofs *wainscoted* as far as the fifth couple of rafters from the chais.

A good many of the flat Norfolk roofs had the ground of the large panels painted white, the ornaments being in darker colours; but in this case a good deal of colour and gold was applied to the painted ribs which divided them.

In Mr. Brandon's "Timber Roofs," a drawing is given of Palgrave Church, where the colours are white, black, and red; here the pitch is rather high, and all the rafters show. Another is Knapton Church, Norfolk, where the ground is yellow, and the ornaments in black, red, and green. Neither of them look particularly well, and the latter is absolutely bad. By the way, I have often found a yellow colour on the woodwork of the latter end of the fifteenth century, and suspect greatly that it was a sort of attempt to imitate gilding. As to gilding itself, a coved roof, with a series of figures on a gold ground, would have a very magnificent appearance. The barrel wooden roofs, so common in France, would have a perpendicular ribs, which were often coloured, and on either side of these ribs ran a pattern like a cresting, and the space in between was filled up with ornaments, such as *fleur-de-lis*. Of course, the colours of these crestings and ornaments varied with the system of decoration. Thus, they were sometimes drawn on the oak itself, either with a very light or with a very dark colour; or, again, the body of the roof might be blue, and they would then require to be in white, shaded with various other colours.

We now come to the southern system of decoration. Here, as I said before, the windows and the architectural decoration are reduced to a minimum—indeed, very justly so, as a comparison between the lower and upper chapels at Assisi will testify—the lower, which is the plainer, being very much better in its effect than the upper, which has a very considerable amount of architectural ornament for an Italian church, although on this side of the Alps it would be considered rather a plain affair. The general tone of these finely painted Italian churches is blue, broken up by figures and architecture of light and tender colours, the divisions being made by white lines. This blue—which is always a pure and harmonious colour, and not the abominable spurious ultramarine, so much in use in the present day—is used in the walls as a positive colour, and on the walls as a background for pictures, where it may almost always be supposed to represent the sky—an illusion occasionally strengthened by one or two little clouds. So far is this carried out, that in these pictures where, from the nature of the subject, very little sky can be seen, there is generally a figure in dark-blue drapery to make up for it. At Siena, on the contrary, the ground of the pictures is gold, which, of course, would require a different treatment in the colour. At Assisi, and, indeed, in almost every case, the paintings start from a dado about 4 or 5 feet from the ground. Sometimes the dado is in real marble, but more generally it is an imitation in *camien*—*i.e.*, in white and black; it is represented as having a base and cornice, and is, moreover, divided into square, round, or lozenge-shaped panels, the interior of which is painted in imitation of the more costly coloured varieties—in fact, the whole is a great sham. In the upper chapel at Assisi we have the northern imitation drapery dado. Above the dado the wall is occupied by a series of pictures on a blue ground, but divided from each other by imitation architecture and mosaics. There are two sorts of these imitations—one where there are pillars, arches, and architraves, as at the upper chapel, at Assisi, and chapter-house, Pistoia; and the other, and far more common, where they assume the shape of long narrow panels of marble, enclosing mouldings, carvings, mosaics, and *l'idea* grounds to relieve the sculpture; the mouldings are shaded according to their position, but cast little or no shadow, and it is the high lights of these mouldings which constitute the white lines really dividing the several compartments. At certain intervals are divers forms, such as circles, quatrefoils, &c., which enclose busts, generally on a gold ground. These forms always occur at the inter-sections; but how many there may be between depends on the total length of the compartment. Now these imitation architectural bands divide the walls according to their shape into so many compartments, which were generally got as near the square as possible; the figures in the pictures are about three-quarters real size, and the height of the pictures about two figures. The last two observations apply only generally.

These bands go round all the great features of the architecture, but when any awkward space occurs, as in the spandrel of an arch or elsewhere, it is filled up either with a plain colour powdered with gold, or an imitation of marble; or a quatrefoil is introduced with a bust.

As there are no real mouldings in the building itself, the soffits of the arches are the only points to be considered. If the arch be wide, it is divided into a number of square compartments, always by means of the aforesaid architectural bands. The compartments may contain pictures, or two standing figures, or two figures under niches; or there may be a third band in the middle, so that there are still two figures, but each surrounded by a border. If the soffit of the arch be narrow, the whole becomes a band cut up at intervals by medallions, or it may be divided by horizontal bands containing half-figures alternating with foliage.

We now come to the vaulting. If barrel vaulting, it is generally erected like a wall and divided by bands. If, however, it be groined, there are three distinct things to be considered: first, the arch; secondly, the borders on either side; and, thirdly, the filling in. The ribs are treated like the bands we have just spoken of, but without the medallions; the general effect is a light grey, broken up by circles of bright colour.

The borders are in reality like the ribs, but with more colours, foliage, and medallions; however, the general effect is darker than that of the ribs. It is also as wide as the rib itself—in fact, much wider than in northern work.

The filling has almost always a blue ground, which is often used alone, powdered with gold stars, but then the stars are always larger than we make them now-a-days. If, however, figures be used, they can be applied in the following manner:—

1. Groups of figures, as in Giotto's work over the high altar at Assisi, where the group is represented as partially turned round so as to get side figures, and to make the composition less stiff.
2. Two figures, one at each angle, and a half figure at the apex.
3. One single figure surrounded by an aureole, the void spaces occupied by angels.
4. Rows of figures standing one over the other.
5. By various geometrical forms enclosing figures or busts. These forms can have their centres in the middle of spandrel, or in the intersection of the ribs. In the latter case they are more complex.

A few remarks on the figures themselves will conclude this part of the subject. The draperies are always tender, and light colours—murrey colour, light purple, yellow shaded with red; brown, and green occasionally, and still more rarely dark red and blue; but the prevailing colour is white shaded with some other colour, so as at a distance to produce the effect of a light and delicate tint.

The figures are kept flat with very little shade. In the early frescoes at Assisi the dark tint was laid on first of all, then the general tone was hatched on over that; and last of all, the very light and very dark touches were added. Afterwards the converse was adopted, *viz.*, to lay on the general tone, and then to hatch on the tint.

As to the flesh. In the early work, an olive green tint is put on first of all, then light flesh colour was hatched all over, leaving the green apparent only in the shaded parts, such as

the eyes, the shade of the nose, the lower jaw, &c.; red is used for the cheeks, with flesh colour to keep it down, and a very slight tint of brown is used in some parts to give the requisite depth; eyebrows are hatched upon this with Venetian red, and a thin line of Venetian red goes round shaded parts and marks the details.

It is curious that at a distance these faces with the green shadows are far more like life than those of the second period, where the green ground was covered over by brown in the shadows. The limbs of the heads are raised three-eighths of an inch from the ground, becoming, however, quite flat where they touch the face. They are indented with rays, and always gilt.

There are many more things connected with the Italian school of painting which, if time allowed me, I could dilate upon; but the real question for us in the nineteenth century is not only how did the Italians and our own ancestors decorate their houses and churches, but how is it that we don't do the same? I believe the fault rests, in the first instance, with the architects, who may be divided into two classes, viz., those who have no work to do, and those who have a great deal more than they can possibly do properly. Now, nothing can be expected from the former, for they have no chance; and as to the latter, of course they are perfectly helpless. I believe, in nine cases out of ten, could the architect find leisure, and could he draw the figure sufficiently well to give his client a notion of what he intends, that he could get whatever paintings and decorations he thinks desirable. But the architect is not the only one in fault; the decorator is equally deficient—leave him to himself and see what crude colours he puts on—emerald green, bright vermilion, the most dazzling white, and, lastly, the abominable French ultra-marine, all in juxtaposition. The fact is that he is ignorant that every colour should be more or less broken up and worked into other colours; but, no, there are the drawers filled with the usual pigments, and he uses them as he finds them; indeed, the immense want of art-education becomes more apparent every day. Ask the decorator why he uses crude colours and cannot do anything approaching to the figure? Ask the engraver why he mangles your design? The answer is, that he has never been taught. Follow up your question by demanding why he does not take advantage of the various schools of design? and the reply will be that he did go, and got disgusted and tired of it; the real fact being that instead of being put at once to the figure, he has been set to work on Dyce's outlines, to draw one side of a leaf exactly like the other side. In fact, it is almost impossible to estimate the amount of damage done by that one book, published, I admit, by a most clever man, and with the best intention; the authorities having forgotten the saying of another very clever, but very unpopular man—viz., Haydon, who declared that the student who can draw a head can draw a leaf, but the man who can draw a leaf cannot necessarily draw a head.

For my own part, if we are to advance at all in the arts, I believe it will only be by a most general teaching of the human figure to all employed in the fine arts, whether architects or artisans. It is very true that colour is a gift of the good God, but he has implanted the germs of it in the majority of us, and if we cannot all be Glottos or Titians, at least we can do our best to improve the talents confided to us. For to whom much is given much will be expected, and it is for this reason that I consider Captain Fowke a very ill-used and much-abused man. People judge of him as an architect, and blame him accordingly. On the contrary, he is no architect, but simply a military engineer, and his building is a very fair one for a military engineer. If it is bad, and there is no doubt of its being exceedingly so, the fault is not his, but his employers. In the same manner if, after a proper amount of good teaching of the human figure, the English artisan cannot compete with his rivals over the water, I give him up; but, up to the present time, he has not had it, and therefore the weight of the blame must fall upon those who neglect to teach him properly.

Reviews.

Wenlock Priory, Salop. By EDWARD ROBERTS, Esq., F.S.A., F.I.B.A., &c. A FEW months since we noticed Mr. Roberts's admirable account of Lilleshall Abbey, and have now before us* the results of his investigations at the now ruined priory at Wenlock, architecturally one of the most interesting of monastic establishments, and well worthy of the trouble and time, and something more, too, which Mr. Roberts has devoted to the study of its remains, which even now extend over the greater portion of an acre of ground, while it is highly probable that other and not unimportant structures have entirely disappeared, their sites being now occupied by houses. The church alone is 332 feet in length by from 61 feet 3 inches, in the nave, to 62 feet 4 inches in the choir, in width. Mr. Roberts's figures do not agree with those of former writers, but they have been taken from actual measurement on the spot, and we have reason to believe that they are correct. The church is cruciform, with aisles to the nave and choir. "Entering the place where formerly was the great west door, we come upon one of the grandest architectural effects in the county;" on the left are the ruined bases of seven large pillars, forming eight bays, and on the right of the corresponding piers three still remain perfect, and carry arches and arcades to nearly the full height of the former structure; over the portion of the south aisle thus preserved there is a vaulted room (a drawing of it is given) of singular interest and admirable design; the purpose of the room is doubtful, and the only conclusion arrived at is that it was used as a vestry for early morning services. It may, however, says Mr. Roberts, have been the monks' parlour, as there was a distinct stair from the cloister, and stone seats.

The chapter-house contains one of the finest examples of interlacing arches in the kingdom; each side is divided into three bays by main shafts and vault ribs, grouped six together; the bays being each subdivided into five bays with three tiers of arches. There is a wonderful variety in the designs of the Norman capitals, which are nearly all different, though in several cases a design is found repeated in another part of the arcading. The remains of what must have been the infirmary is now used as a cow-house; about the walls are a few remnants of fine old Norman work.

Mr. Roberts's account gives us a plan of the buildings, so far as they can be traced; a view, as before mentioned, of the room over the south aisle, a section of the chapter-house, together with five lesser subjects, one of which, a base stone with incised lines, is, perhaps, a unique example as regards the subject of ancient architectural drawing.

Tables for the Purchasing of Estates, Freehold, Copyhold, or Leasehold, Annuities, Advowsons, &c., and for Renewing of Leases, &c., &c. By WILLIAM INWOOD, architect. With considerable additions by M. Feder Thoman. Seventeenth Edition.

The Land Valuer's Best Assistant, being Tables on an Improved Plan for Calculating the Value of Estates. By R. HUDSON. A new edition with additions and corrections.

WE are frequently asked to point out works for the guidance of those engaged in the valuation of estates, leases, and lands, and may here answer, or refer to a source where will be found answers to many questions on the subject for correspondents, by recommending the two little books before us, published by Messrs. Lockwood and Co., Stationers' Hall-court. Inwood's book is well known as a

reliable authority; the present edition contains many additional tables, of use to all who may be employed in the valuation of estates. Mr. Hudson's book will be found to lead to a very considerable saving of time.

Thebes: its Tombs and their Tenants, Ancient and Present, including a Record of Excavations in the Necropolis. By A. HENRY RHIND, F.S.A., &c. Longman and Co.

WE regret that the demands on our space will not allow us at present to do much more than commend this work to the notice of our readers. The accomplished author gives the result of excavations which he made at Thebes, and a precise account of a large family tomb of an official personage, which a long, and at times, most discouraging search brought to light in an undisturbed condition. It is part of the plan of the work that "the various details should exhibit some realisation at once of the conditions under which, and those by means of which, Egyptian relics have been procured. Thebes has, therefore, been treated of introductorily as the ancient capital, but chiefly as the central sources which have been archaeologically so productive." It is difficult to say which is the most important investigation entered into by the author; but no discovery is of greater interest than that of the undisturbed tomb mentioned above. Here the author discovered, after great labour and many discouraging disappointments, an excavated tomb, reaching to a distance of over 180 feet into the rock. It was reached after penetrating through two distinct passages 125 feet in length, and was approachable only by a shaft 20 feet deep, in which hung cords by means of which the tenants of the tomb had been lowered to their resting-places ages before. It was in the outer passage leading to this tomb that Mr. Rhind discovered a funeral canopy of wood, brightly painted, and in perfect preservation. Representations of such canopies had been seen by the author, but he believes that there is no evidence of any actual example having before been met with. The book makes a handsome volume, and its contents are a valuable contribution towards the illustration of Egyptian art.

Correspondence.

BIRMINGHAM FREE LIBRARY.

SIR,—As the statements contained in the letter of Mr. E. M. Barry, which appears in the BUILDING NEWS of Friday last, are not in accordance with the facts, and might, if uncontradicted, be prejudicial to the competition which the Free Libraries' Committee have invited, I beg to request you will insert in your ensuing number the following observations in reply.

In 1855 the Council of the Birmingham and Midland Institute commenced the erection of a suitable building for the accommodation of their body, in accordance with designs prepared by Mr. E. M. Barry. A portion of the building having been erected, the Council of the Institute were, through exhaustion of their funds, compelled to suspend the further progress of the works, and ultimately to abandon their intention of completing the building. Five years afterwards the Corporation of the borough being in quest of a site for their proposed Free Libraries, the land unbuild upon adjoining the Institute was offered for that purpose by the Council of the Institute, upon condition (in order to avoid incongruity of design) that the Library should be erected in uniformity with their building. The Town Council did not accept the transfer of the land until plans had been obtained, and an estimate of the cost of the building had been laid before them. These plans were prepared by Mr. Barry, and the total cost (exclusive of cellars) was estimated by him to be £10,500. The Town Council being satisfied with the extent of the accommodation and the cost, accepted the transfer of the land.

Mr. Barry's charges "for attending upon the Libraries' Committee for two sets of designs prepared in accordance with instructions received, and a further set of drawings prepared for the purpose of being submitted to the Town Council, and his travelling expenses," amounting to £45, were paid by the Corporation, and the terms upon which he undertook to superintend the erection of the buildings were arranged.

Builders were invited, by advertisement, to compete; and, on the tenders being opened, the lowest was found to be £17,900 (exclusive of cellars). Mr. Barry was then requested by the Free Libraries' Committee to report, in detail, the cost of the erection of certain portions of the building, and what alterations might be made to effect a reduction in the cost; whereupon Mr. Barry attended the Committee, admitted there was a mistake in his estimate, and expressed his willingness to abandon all professional charges in the event of the Town Council refusing to vote the additional sum required to carry out his plan. Several modifications for reducing the cost of the building were suggested by that gentleman. On the 11th November last, Mr. Barry addressed a letter to the Committee, in which he stated that, provided the gallery of art and cellars were omitted and certain alterations suggested by him adopted, the remainder of the building might be erected for £12,250—this sum being still considerably in excess of the amount of his original estimate for the whole building. The Committee again applied to Mr. Barry to revise his designs, so as to obtain a further reduction, if possible, in the cost of the buildings, and also to report if, by any re-arrangement of the plans altogether, the requisite accommodation could be afforded for the amount of his estimate; to which Mr. Barry replied that "he could make no alteration or arrangement which would effect a greater saving in the cost than as before detailed."

As the alterations and omissions proposed by Mr. Barry involved the abandonment of a most important feature of the scheme approved by the Council, it became the duty of the Libraries' Committee to bring the whole subject before the Town Council and to ask for further instructions, which they did in a report presented at a meeting held on the 4th day of March last, when the Council, deeming it desirable to make an effort to obtain the erection of the whole of the buildings for the sum already voted for that purpose, invited architects to forward new plans, specifications, and estimates.

Mr. Barry states that he offered to prepare new plans to suit the financial exigencies of the case. So far from this being the fact, it will be observed that Mr. Barry positively assured the Committee that he could make no alteration or arrangement which would effect a greater saving in the cost than he had already made.

The plan accompanying the instructions to architects is simply one of the site, indicating the position of the adjoining buildings, and is not, as Mr. Barry

* *Collectanea Archaeologica*, British Archaeological Association.

states, copied from a block plan of his. The Council has no plans of Mr. Barry's in its possession. The whole of his drawings, specifications, and estimates, were returned to him at his own request in March last, although, as will be seen, the sum of £45 was paid by the Council for such plans.

With regard to Mr. Barry's intimation that he has placed himself in the hands of his solicitor, I would state, for the assurance of architects, that the Council have taken no steps in the matter of this competition unadvisedly.

Birmingham, April 30th, 1862.

THOMAS STANBRIDGE,
Town Clerk.

ARCHITECTURAL ALLIANCE.

SIR,—I was very glad to observe your remarks in to-day's BUILDING NEWS on this subject. I assure you the promoters of the scheme have not given it up by any means, but, on the contrary, have been silently organising the "Alliance" as far as possible, in order to have a conference during this auspicious season.

As you observe, it was intended to have held a conference last year, but it could not be accomplished, owing to our not having received replies to all our circulars in time. It is, however, now determined to hold the first meeting or conference on Tuesday, July 1st, and in the BUILDING NEWS and Builder will appear advertisements calling attention to it.

The scheme has been very well received by the profession, and we have already in the Alliance the Institute of Scotland, the London Association, and all the provincial associations of a professional character that we know of, in the United Kingdom; but if there are any we have missed we shall be very glad to receive them into fellowship on their making themselves known to us; and I may add that we hope soon not only to have "the Institute" one of us, but to organise an association in every county or large town where one does not at present exist.

I enclose you a copy of the "outline scheme," in case you should think fit to give it again to your readers.

Darlington, May 6th, 1862.

J. P. PRITCHETT.

Suggested Outline of a Scheme for Forming an Architectural Alliance.

1. That it be called "The Architectural Alliance."
2. That although for the present it is desirable to confine it to the United Kingdom, the extension of its operation to other countries shall be kept in view.
3. That its object shall be to promote united action among the otherwise isolated architectural societies, and to aid the establishment of new local societies where not now existing.
4. That it shall take cognizance of all matters affecting the interests of the profession. That for this object it shall especially direct its attention to the present unsatisfactory mode of conducting competitions, and shall endeavour, by the publication of a scale of charges, to regulate the rates of professional remuneration.
5. That all architectural societies giving in their adherence at or before the first meeting, shall constitute the nucleus of the Alliance; and in future all architectural societies shall be eligible for election in the mode hereafter provided.
6. That any society wishing to join, shall be proposed, in writing, by a society already in the Alliance through their secretary; that such proposal shall be sent to the secretary of the Alliance at least one month before the annual meeting, and shall state the title of the society proposed, and the names of its chairman and secretary. The name of the society so proposed shall be inserted in the notice convening the meeting, when the election or rejection of such society shall be decided by ballot.
7. That the business of the Alliance shall be conducted by a president, vice-president, treasurer, honorary secretary, and delegates from each society in the Alliance. The delegates shall consist of the chairman of each society in the Alliance (*ex officio*), four members appointed by the Royal Institute of British Architects, three members by the Scottish Institute, three by the Architectural Association of London, and two by each provincial society, or any less number they may see fit to appoint; all to be appointed annually.
8. The president, vice-president, treasurer, and honorary secretary to be elected annually by ballot by the delegates. All correspondence shall be conducted by the secretary of the Alliance and the secretaries of the various societies composing it.
9. That the annual meeting shall be held on the first Tuesday in June in each year, and other meetings may be held as hereafter provided for.
10. All members of each society in the Alliance shall have the right to attend the meetings of the Alliance on introduction personally by any delegate, or by a card of introduction from one of them; but delegates only shall have the power to speak or vote.
11. Questions may be brought under the cognizance of the Alliance by any society writing, through their secretary, to the secretary of the Alliance, who shall then ascertain the views of the other allied societies and report to each the general feeling. On the requisition of a majority of the councils or committees of the various allied societies, the secretary shall call a special meeting of the delegates for the consideration of any question that may arise. To such special meetings provincial societies may send all their delegates, or one delegate with three votes, or may exercise their three votes by proxy through any other delegate.
12. That the officers of the Alliance shall prepare a report of the proceedings of the Alliance for each year, to be laid before the annual meeting, and it shall be competent for such meeting to alter or amend it, and to order it to be printed if they see fit, in which case a copy shall be sent to each member of every society in the Alliance.
13. That every society publishing a report of its proceedings, or of any paper read before it, shall present a copy to every other society in the Alliance.
14. That any member of a society in the Alliance shall have the privilege of attending (but not of speaking or voting) at the meetings of any other society in the Alliance, provided such member be introduced by letter from one of its own delegates, or personally by a member of such society.
15. That each society shall pay the expenses of its own correspondence, and shall make arrangements with its delegates as to their expenses, and the expenses of the Alliance (stationery, postage, printing, &c.) shall be borne equally by the allied societies.

DUNDEE NEW CEMETERY.—Plans have been obtained for laying out the new cemetery for the parish of Dundee. The site of the cemetery is a field of about twenty acres. The plans show two methods of laying out the ground, the one dividing it into parallelograms, while in the other the divisions are of a curvilinear form. In both there is an extensive terrace about the centre of the ground, running from east to west. The principal entrance in both plans is from the centre of the southern boundary. In the designs approved by the Committee, the principal or carriage gateway is about twelve feet wide, and on each side there is a smaller gateway, each having a moulded pointed arch, and jambs on the piers between the openings. At each angle of the gateway buttresses are carried up, terminating in octagonal turrets, the extreme height being 42 feet. Over the arches, and extending to the principal cornices, the surface is enriched with perpendicular Gothic panelling, the parapets and face of the buttresses being treated in a similar way. On the west side of the entrance there is a lodge, two stories in height, for the superintendent, and on the opposite side a smaller lodge, one story in height, for workmen's accommodation.

TENDERS.

MANSION, TORQUAY.

The tender of Messrs. J. Grant and Son, builders and contractors, has been accepted for building the new wing and other alterations at Lupton House, Devonshire, the property of Lord Churston. A. Salvin, Esq., of London, is the architect.

DWELLING HOUSES, TOTTENHAM.

For the erection of four houses, High Cross, Tottenham, for Mr. Keasley. Mr. J. Rowley, architect, 17, St. Helen's-place, City.

Rivett	£1,593	Cushing	£1,152
Humphreys and Son	1,190	Barker	1,150
Clarke	1,160	Chapman (accepted)	1,115

CHURCH, SURREY.

For the erection of Christ Church, East Sheen, Surrey. Mr. A. W. Blomfield, M.A., architect. Quantities by Mr. J. A. Bunker.

Bird	£4,787 0	Myers and Sons	£4,305 0
Goodale	4,700 0	Child and Son	4,185 0
Nicholson and Sons	4,555 0	Chincock Brothers	3,991 5
James Long	4,389 0	Cartier	845 0
Turner and Sons	4,359 0		

CHURCH, GLOUCESTER.

For building Little Compton Church, Gloucester. Edward G. Bruton, F.R.B.A., architect.

Compton	£1,330	Young and Co.	£1,025
Denner	1,050	Claridge	950
Bartlett	1,040	Cowley	941
Selby	1,031		
Architect's estimate	£1,025.		

CHAPEL, MARKET RASEN.

For the erection of a Wesleyan Chapel at Market Rasen. The tender of Mr. Jackson, of Lincoln, for £2,000 and the old materials of the chapel, was accepted.

VILLA, DORKING.

For erecting a small villa at Dorking. Poulton and Woodman, architects, Reading.

Sheppard	£1,770 0 0	Perry	£1,623 0 0
Biggs	1,760 0 0	Lynn and Dudley	1,560 0 0
Mathews	1,760 0 0	Shearman	1,560 0 0
Woodroffe	1,745 0 0	Hamblin	1,519 10 4

ASYLUM, PRESTWICH.

For the execution of the works in connection with the proposed enlargement of the County Lunatic Asylum at Prestwich. Mr. Charles Holt, architect, Bolton.

Main block.		Laundry.		Total.
Bramhall	£14,400 0 0	£1,600 0 0	£16,000 0 0	
Gutteridge	14,875 0 0	1,500 0 0	15,375 0 0	
Farrel	13,679 0 0	1,668 0 0	15,347 0 0	
W. & J. Coop.	13,440 0 0	1,582 10 0	15,022 10 0	
Oilbert & Sharp ..	13,400 0 0	1,590 0 0	14,990 0 0	
Skinner	13,285 0 0	1,630 0 0	14,915 0 0	
Metcalf & Waterson	13,263 0 0	1,543 0 0	14,806 0 0	
Thompson	12,973 0 0	1,532 0 0	14,510 0 0	
Greenup & Co.	13,100 0 0	1,300 0 0	14,400 0 0	
Flitcroft	12,252 0 0	1,448 0 0	13,698 0 0	
Hodgson (accepted)	12,349 4 0	1,180 11 0	13,529 15 0	

BOARD OF WORKS FOR THE LIMEHOUSE DISTRICT.

Tenders for building new offices and board-room for the Board of Works for the Limehouse district, in White Horse-street, Commercial-road, E. Mr. Charles Dunch, architect. Quantities supplied.

Heade	£6,298	James and Ashton	£5,531
Hedges	6,220	Hart	5,333
Hill and Co.	5,910	Hitch	5,287
Wood Bros.	5,853	Curtis	5,220
Hall	5,800	Perry and Judson	5,194
Brown	5,790	Jacobs (accepted)	5,172
Ennor	5,689	Sawyer	4,980
Myers	5,620		

COMPETITIONS AWARDED.

LAYING OUT GROUND, TRANMERE.

The decision that took place on the 15th ult., on the plans submitted by about 30 competitors for the laying out of the fine estate in Higher Tranmere, on the slope of the hill facing South Oxtan, recently purchased by the Tranmere Freehold Land Society, was to the effect that the committee unanimously awarded the first premium of £20 to Messrs. W. Lowndes-horough and J. A. Meakin, of Liverpool, and the second premium of £15 to Messrs. Underwood and Billing, of Clifton, near Bristol. We understand that the committee had selected another plan of the former gentlemen for the second premium, but when it was discovered that they had already gained the first, the rule of prize giving adopted at various public institutions was followed, and the second prize given to the next in order of merit.

COLLEGE, SHEFFIELD.

The Building Committee of the proposed Methodist New Connexion College, Sheffield, after having invited sundry architects to submit plans in competition, have selected those by Mr. William Hill, of Leeds. The second premium of £30 was awarded to Mr. Flockton, of Sheffield, and the third premium of £10 to Mr. Scrivener, of Hanley. We understand that the works are to be immediately proceeded with under Mr. Hill's superintendence.

COMPETITIONS OPEN.

CATHEDRAL.

CORK.—Architects are invited to furnish designs for the erection of the cathedral of St. Finbar, Cork, at a cost not exceeding £15,000. A premium of £100 will be given for the best and most approved plan, and £50 for the second. Plans and designs to be sent to the hon. secretaries, Ven. the Archdeacon of Cork, Rev. J. N. Woodroffe, or T. M. Osborne, Esq., Cork, not later than the 1st August next. Further information and a plan of the site may be obtained on application to W. C. Bennett, Esq., notary public and Chapter clerk, 15, South-mall, Cork.

SCHOOLS, &c.

LANCASHIRE.—For the erection of the proposed new schools, vestries, &c., Rawtenstall, Lancashire. Plans, &c., with Thomas Simpson, architect, Nottingham, to May 10th, inclusive; and at Rawtenstall, on application to Thos. Hoyle Whitehead, Esq., on and after the 12th May. Printed quantities will be supplied on application to the architect. Tenders to be delivered to Thos. Hoyle Whitehead, Esq., Rawtenstall, on or before the 21st of May.

LIBRARY AND READING ROOMS.

BIRMINGHAM.—The Free Libraries' Committee of the Council of the Borough require plans, sections, specifications, and estimates for the erection of a free reference library and reading-rooms, lending-library and news-room, and gallery of art, upon the piece of vacant land adjoining the Midland Institute Building, with an elevation uniform with the said building. Intending competitors are requested to send in their plans, specifications, and estimates, under cover to Thomas Standbridge, town clerk, Town clerk's office, Temple-street, endorsed "Plans for Free Reference Library Buildings," on or before the 16th June. Particulars of the accommodation required, and of the conditions of competition, together with a lithographed plan of the site, may be obtained on application.

MEMORIAL.

GLOUCESTER.—The committee appointed to carry out the Hooper Memorial, at Gloucester, invite sculptors to submit models of designs for the figure of Bishop Hooper, which is intended to be placed under the canopy of the monument just erected in the churchyard of St. Mary de Lode, Gloucester. The models or statuettes to be carved in stone, and to be one-quarter the real height (7 feet). The author of the best design, approved by the committee, will be appointed to execute the full-sized figure; and the sum of ten guineas will be awarded for the second-best design.

DRAINAGE.

KINGSTON.—The Corporation of the borough of Kingston-upon-Thames invite engineers and others to submit plans, specifications, and estimates for a thorough and complete system of drainage of the borough, and offer a premium of £100 for the plan approved, retaining the liberty to carry it out or not. The plan approved to become the property of the corporation. The system of drainage to blend, as far as practicable, with existing drains, to plans and descriptions of which are at the Town Clerk's office. The plans, Clerk's office also the commission for carrying out the works, to be sent to the Town &c., stating on or before the 17th day of May.

VICARAGE.

NOTTS.—Plans and estimates are required for the erection of a new vicarage house at East Retford, on the following terms:—1. That the requirements of the Ecclesiastical Commissioners as to the materials employed, height of rooms, thickness of walls, &c., be complied with. 2. That the estimate, exclusive of architect's commission, do not exceed £1,000. 3. That architects, on sending in plans and estimates, be prepared to find, if required, a respectable contractor willing to carry out the design at the estimated cost. 4. A general statement of the ground plan, number of rooms, &c., &c., required will be supplied to any architect who purposes to send in a design and estimate. 5. Plans not accepted will be returned to the architect. The arrangements will probably be complete for the building to be commenced in June. Plans and estimates must be sent in on or before May 17th, to Rev. Arthur Brook, the Vicarage, East Retford.

CONTRACTS OPEN.

MARKET BUILDINGS.

BATH.—For the erection of iron roofs, masonry, and other works involved in the reconstruction of the Bath provision markets. Plans, &c., on application to Hicks and Isaac, architects, 13, Northgate-street, Bath, from May 3. Sealed tenders to the Town Clerk, Guildhall, Bath, for the separate trades, endorsed, "Tenders for the reconstruction of Markets," by the 15th of May.

BANK.

LINCOLNSHIRE.—For the erection of a bank and manager's house at Spalding, for the Stamford, Spalding, and Boston Banking Company. Particulars from Mr. William Eve, surveyor, 3, Union-court, Old Broad-street, E.C. Tenders on or before the 17th May.

CHURCHES.

YORK.—For the erection of a new Catholic church and presbytery, to be built in the City of York. Plans, &c., at the Very Rev. Joseph Bender's, Precursor's-court, Petergate, York; or at the office of the architect, George Goklie, Esq., 34, Gloucester-place, Portman-square, London, from May 5 until May 14, on which day sealed tenders are to be forwarded to the Very Rev. Joseph Bender, Precursor's-court, York. Bills of Quantities may be obtained on application to Thomas Wilson, Esq., No. 7, Hanover-square, Sheffield.

OXFORD.—For the enlargement and repewing of the Church of St. Aldate, Oxford. Plans, &c., at 40, Pembroke-street, Oxford, or at the office of Mr. John T. Christopher, architect, No. 10, Cannon-street, E.C., London. Sealed tenders to be sent on or before 14th May, addressed to the Rev. the Rector of St. Aldate's, 40, Pembroke-street, Oxford, and endorsed "Tender for works at St. Aldate's Church."

IRELAND.—For enlarging the church of Drumgoon, County Cavan; for repairing the churches of Cloncha (Mallin), Drumholm (Balintra), Gollard (Laghey), County Donegal; Mohill, County Leitrim; Tybeline, County Roscommon; Killery-Killoran, County Sligo; Rathaspeck, County Westmeath; and for repairing and painting externally the churches of Olencly, County Donegal; Clontibret, Magheraclooney, Tullycorbet, County Monaghan. Plans, &c., with the resident Ministers of the parishes. Each proposal to be forwarded on or before the 15th instant, sealed, prepaid, and addressed thus:—"Proposal for ——— the church of ———. The Ecclesiastical Commissioners for Ireland, Dublin."

WILTS.—For taking down, and partially rebuilding and enlarging, the parish church at Sutton Mandeville, Wilts. Plans, &c., on application at the rectory.

IRELAND.—For rebuilding the church of Oasterrahan, County Cavan; for enlarging the church of Castelnock, County Dublin; for works to be executed at the churches of Shircock, County Cavan; Youghal, County Cork; Dunfeeny-Kilmore, Moy, County Mayo; Kilglass, Killybeg, County Sligo; and for painting internally the church of Athboy, County Meath. Plans, &c., with the resident ministers of the parishes. Tenders sealed, prepaid, and addressed thus:—"Proposal for ——— the Church of ———. The Ecclesiastical Commissioners for Ireland, Dublin," on or before May 16.

IRELAND.—For the erection of a new Catholic church, to be built at Kenmare. The parish priest will show the plans and specifications, and will receive tenders up to June 1.

WARWICKSHIRE.—For repairing and restoring the parish church of Long Compton, Warwickshire, near Chipping Norton. Plans at the Vicarage, Long Compton, to the 17th May inclusive, sealed tenders, directed to the Rev. H. Lanphier, Long Compton Vicarage, Shipston-on-Stour, on or before the 24th May.

STROUD.—For the several works required to be done in re-building the parish church of Stroud. Plans, &c., at the office of Mr. J. G. Bland, architect, Birmingham. Tenders to be delivered on the 20th May. Copies of drawing and specifications will also lie at Stroud for inspection, and may be seen on application to the architect.

ISLEHAM.—For the repair and restoration of Isleham parish church, near Newmarket. Plans, &c., at the Vicarage, Isleham. Tenders to be delivered at the Rutland Arms, Newmarket, on the 20th May, at 12 a.m.

DEVON.—For altering and restoring the parish church of St. Giles-in-the-Wood, near Torrington. Drawings &c., with Mr. Ebdon, at the school, adjoining the church, or at the offices of the architect, 50, High-street, Exeter. Tenders to the architect, Mr. John Hayward, on or before the 13th May.

YORKSHIRE.—For the erection of a new north aisle, and for the re-roofing, repairing, and restoration of Kirk Smeaton church, near Womersley. Drawings, &c., at the school-room, at Kirk Smeaton, to the 14th May inclusive. Sealed tenders are to be delivered to Messrs. J. B. and William Atkinson, architects, 93, Micklegate, York, on or before the 15th instant, at 9 a.m.

CHAPELS, &c.

SUSSEX.—For the erection of two chapels and sexton's lodge, and out-offices connected with the Burial Board for the parish of Broadwater, in the county of Sussex, on land at Broadwater, intended to be used as a cemetery for the parish of Broadwater and town of Worthing, together with the boundary walls and other works connected therewith. Plans, &c., with Mr. W. Verrall, clerk to the Burial Board, Worthing. Sealed tenders endorsed, "To the Burial Board for the parish of Broadwater, Tender for Works," to be delivered at the clerk's office, 15, High-street, Worthing, before 5 o'clock on the 20th May.

SCHOOLS, &c.

LANCASHIRE.—For the erection of the proposed new schools, vestries, &c., at Rawtenstall, Lancashire. Plans, &c., on application to Thomas Hoyle Whitehead, Esq., on and after the 12th May. Printed quantities will be supplied on application to the architect. Tenders to be delivered to Thomas Hoyle Whitehead, Esq., Rawtenstall, on or before the 21st May.

DWELLING HOUSES, &c.

BERKS.—For repairs and alterations to the Bridge Estate premises in the High-street, Wallingford, formerly known as the Bear Inn. Plans, &c., from Mr. J. Kirby Hedges, town clerk, Wallingford, or at the offices of Messrs. Clacy and Son, architects, Reading. Tenders sealed, and endorsed "Tender for Works, Bridge Estate, Wallingford," to be sent to Mr. Hedges, on or before the 13th May.

HUNSTANTON.—For the erection of three first-class, four second-class, and four third-

class houses, at Hunstanton, for the Hunstanton Building Association (Limited), according to plans, &c., prepared by Mr. Butterfield. Plans, &c., at the office of Mr. J. S. Valentine, C.E., 17, Parliament-street, Westminster; or with Partridge and Edwards, Solicitors to the Association, King's Lynn; or copies will be forwarded on prepayment of 21s. Tenders, stating a separate amount for each class of house, marked "Tenders for Building at Hunstanton," to be delivered to the solicitors on or before the 14th May.

DUMFRIES.—For building an addition to the miller's house at Glencesslin Mill, Dumfries, for repairing and building new office houses there, and for repairs of considerable extent on the kiln and mill. Plans, &c., Sir William Brown, Bart., solicitor, Dumfries, to whom tenders by the 18th inst.

HANTS.—For the erection of a villa residence at Botley, Hants. Plans, &c., at Mr. Harding's Harness Manufactory, Botley, on and after the 22nd instant. Tenders to be delivered at the office of Mr. John Colson, architect, St. Swithun-street, Winchester, on or before the 5th June.

READING.—For the erection of a villa residence, with stabling and outbuildings, near the Eastern Avenue, Whiteknights, Reading. Plans, &c., with Cooper and Goulding, architects and surveyors, 5, Market-place, Reading.

FARM BUILDINGS.

WILTS.—For the erection of farmhouses, extensive farm steadings, and numerous labourers' cottages upon the Earl of Pembroke's estates, Wilts. Apply at the offices of Mr. Samuel Clarke, architect, engineer, and surveyor, the Corn Market House, Salisbury.

WILTS.—For a large farmhouse, homesteading, &c., upon Banerton Farm, near Salisbury. Tenders to Mr. Clarke, Corn Market House, Salisbury, on or before the 19th May.

ASYLUM.

WILTS.—For the erection of additional buildings sufficient for the accommodation of about 80 Patients, at the Wilts County Lunatic Asylum. Plans, &c., at the Asylum, and further information obtained at the office of Mr. Peniston, the County Surveyor, at Salisbury. Sealed Tenders, addressed to the Committee, to be sent to the Clerk to the Visitors at the County Asylum, before ten o'clock.

DUBLIN.—For erecting a new Asylum at Leeson Park for the Board of Governors of the Old Men's Asylum, according to the Plans, &c., to be seen at the office of the Architect, William G. Murray, 68, Lower Gardiner-street, Dublin. Tenders to be addressed to T. Collins, Hon. Sec., 28, Harcourt-street, and forwarded on or before the 20th May, endorsed "Tenders for Building."

WORKHOUSE.

HANTS.—For the works required to be done in making certain alterations in, and additions to the Alverstoke Workhouse. Plans, &c., at the Boardroom of the workhouse on and after the 15th May, or at the office of Mr. Thomas Hellyer, Boonverie House, Ryde, Isle of Wight, architect, of whom every information may be obtained, and Bills of Quantities may be had.

WAREHOUSE FRONT.

LONDON.—For new river frontages to the granaries and warehouses of the Oil Mills abutting on the Thames, at Limehouse Hole, between Limekin Dock and the Limehouse Entrance Lock of the West India Docks, the property of Messrs. John Garford and Sons-Plan, &c., on the premises, or at the office of Mr. J. B. Redman, C.E., 5, New Palace yard, Westminster. Tenders on or before the 13th May.

BRIDGES.

GATEHOUSE.—For building a new bridge over the river Fleet, at Castramont, in the parish of Girthorn. Plans, &c., with Mr. Ewart, Bank of Scotland, Gatehouse, who will receive offers till the 20th May.

POLICE STATIONS.

SIDMOUTH.—For the erection of a police station, &c., at Sidmouth, Devonshire. Plans, &c., with Henry Ford, Clerk of the Peace, Castle of Exeter, and at the office of Messrs. Radford and Williams, Clerks to the Justices, Sidmouth. Sealed tenders, endorsed "Tender for Sidmouth Police Station," to be sent to Mr. Ford, on or before the 3rd June.

RAILWAY WORK.

INVERNESS AND PERTH JUNCTION RAILWAY.—For the construction of the two remaining sections of the line, viz.:—The Kingussie contract, extending from Kilarua Post-office to the south side of the river Spey, measuring about 13 miles or thereby, comprising about nineteen small bridges and culverts, with a timber viaduct across the Spey. The excavations and embankments consist of about 470,000 cubic yards. The Dalwhinnie contract extends from the south side of the Spey to the boundary of the county of Perth, measuring 15 miles or thereby, and consists of thirty-two small bridges and culverts, and about 450,000 cubic yards excavations and embankments. The rails, chairs, sleepers, spikes, fish-plates, and bolts will be supplied by the Railway Company. Drawings, &c., at the office of Joseph Mitchell, Esq., C.E., Inverness, from whom, or from the assistant-engineer on the line, duplicate schedules may be obtained, at £2 2s. each. The line is staked out at distances of every 100 feet, according to the working sections. The deepest cuttings are also pitted to ascertain the nature of the materials in the excavations. An assistant-engineer will be at the County Marsh, near Dalnacardoch, on the 20th May, at 10 o'clock a.m., to accompany the contractors over the Dalwhinnie contract; and at Spey-bridge, near Kingussie, on the 21st, to go over the Kingussie contract; and to point out the works and sites of the bridges. The draft contract proposed to be entered into will be seen with the assistant-engineer, or at Mr. Mitchell's office. Sealed tenders, addressed to the secretary, and marked "Tender for Inverness and Perth Junction Railway Works," "Dalwhinnie," or "Kingussie Contract," as the case may be, must be lodged at his office, on the 28th May, at 4 o'clock p.m.

SEWERAGE, &c.

MAIDSTONE.—For the construction of a sewer in Week-street and Earl-street, Maidstone, about 140 yards in length. Tenders to Messrs. Beale and Hoar, Maidstone, on or before 13th May. A plan and specification of the work may be seen at the office of Mr. Bulmer, Maidstone.

ROADWORK, &c.

WOLVERHAMPTON.—For levelling, sewerage, paving, channelling, and forming New Hampton-road, in the borough of Wolverhampton, in length about 2,074 yards. Plans, sections, &c., with the borough surveyor. Tenders to the surveyor's offices, Town-hall, North-street, on or before the 16th May, addressed to the "Chairman of the Streets Committee," and endorsed "Tender for New Hampton-road."

TO CORRESPONDENTS.

We cannot undertake to return rejected communications. **WORKS IN PROGRESS.**—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

M. R. J. B. A.—In type.
C. J. P.—Received. Thanks.
A. N.—Shall receive attention.
H. B. J. B.—Thanks.
C. S.—Send name and address to our publisher, and parcel shall be forwarded.
T. C. N.—Declined. We cannot undertake to return MSS.
K. R.—Too late for publication.
B.—Will receive a reply by letter.
EXHIBITION.—Already under consideration.
M. R. Z.—Yes; if suitable.
J. E.—Below our mark.
F. S. A.—We cannot say.
WILLIAM B.—In the hands of our engraver.
M. T.—Probably; but we do not like to promise.
A. B. A.—Has been declined more than once.
O. Q.—Send extracts for specification.
W. M. (Manchester), P. W. (Norwich).—Write to Spott, of Bucklersbury, London.

* * * All communications to be addressed to the Editor of *The Building News*, 20, Old Broad-street, Strand, W.C., except letters referring to advertisements or other business matters, which should be addressed to the Publisher, 18 to 21, Old Broad-street.
Advertisements are received up to six o'clock on Thursdays.

THE OFFICERS OF THE INSTITUTE.

THE period has just now arrived and passed at which the year of office of the council and officers of the Royal Institute of British Architects is concluded, and when they give an account of their stewardship to their constituency assembled at the "Annual General Meeting;" at which meeting also their vacated seats have to be filled either by the re-election of the old occupants, or by appointing new officers, as the case may be.

The annual election of officers has passed off this year without any of the excitement which last year attended the election of a President. Mr. Tite has been re-elected without any attempt at opposition on the part of those sections of the profession whose members were last year desirous of bringing in Mr. Beresford Hope. This compliment is one fairly due to the diligence and success with which Mr. Tite has conducted the affairs of the Institute during his presidency.

Of the Vice-Presidents, the two who retire are Mr. Digby Wyatt and Professor Donaldson, and they are succeeded by Mr. Owen Jones and Mr. Ashpitel, Mr. Scott being re-elected.

The honorary secretaries, it has been rumoured for some time past, proposed to retire, and this rumour received authentic confirmation a short time ago. Mr. T. H. Lewis and Mr. James Bell might have offered themselves for re-election as often as they pleased, and have been sure that their offer of continued service would have been promptly and gratefully accepted; but they have worked so well that no one can grudge them the relief of retiring from very arduous duties when they desire to do so. Mr. Lewis entered office upon the retirement of Mr. Digby Wyatt, in May, 1859, and has therefore been honorary secretary for three years. Mr. Bell has held office for two years only, he having succeeded Mr. Nelson, who, after long and laborious services rendered with great willingness, retired in 1860.

It is beyond doubt that the last three sessions of the Institute, the three since its removal to its present convenient house in Conduit Street, have been the most active and the most useful by far of its existence. The number of members has greatly increased, the attention of the Institute has been directed to questions of the greatest practical importance to its members; the average excellence of the papers read has been very great; the meetings, ordinary and special, have been numerous and well attended. All these things are proofs of the very efficient way in which the duties of the officers, and particularly of the honorary secretaries, have been performed, and will have also helped to render those duties arduous in the extreme.

We are only speaking the general feeling of the members when we say that the honorary secretaries who retire carry with them a very hearty appreciation of the value of their services, and the best thanks of all, without exception. They are to be succeeded by Mr. Seddon and Mr. C. F. Hayward, two members from whose known activity, energy, and skill the best expectations may be formed for the continued good performance of the duties of the secretariat.

It is no light task which the gentlemen whose names we have mentioned have successively undertaken, and it is really fortunate that hitherto members have been found who are eligible to the post, and willing to act. The honorary secretaries of the Institute must of necessity be men of considerable standing and experience; and yet at the same time an amount of work has to be got through which requires much exertion and time. But the class of men fit for the post being those who are usually immersed in business, to such an extent that their whole time and strength seem needed for the discharge of the duties they owe to their private clients, it has only been by great efforts, and a great sacrifice of personal comfort, that their public and private duties have been at all combined; and, as we have seen, the frequent changes which have of late taken place show that the post is one which men in practice do not feel it very possible to continue to hold for long together. There is little room to doubt that the same thing is likely to occur, with the gentlemen who have now assumed the position, as has occurred with their predecessors, and that some few years hence a fresh change will occur. This is in many ways undesirable, and suggests the thought that the time is approaching, if it be not come, for the election of a paid secretary in place of two honorary ones. Such societies as the Institute of Civil Engineers, the Society of Arts, in fact many others, find this course necessary, and have reaped great benefit from it; and it is impossible not to feel that the efficiency of the Institute, should the number of its members continue to increase as it has lately done, will only be permanently secured by the appointment of a well-selected and well-paid secretary.

There is one point to which it is to be hoped the Institute will turn its attention, and in regard of which less satisfactory progress has been made than might have been hoped. We refer to the education or assistance of students, and the steps to be taken to induce

them to study and to make use of the library of the Institute. We believe that it will not be found that the number of students is much larger than it was when the previous annual meeting was held—at which time there were only seven students—and, considering the large series of prizes offered for competition, we do not think that the drawings submitted have been of the class of merit which might have been fairly expected or so numerous as they ought to have been.

These medals, prizes, and other inducements are offered upon the supposition that there exists a large body of architectural students desirous of distinction and anxious to come forward for general competition. The results seem to show either that no such body exists, or else that, as a rule, the students are far less advanced than is to be wished or had been hoped. We believe there is some truth in both these statements.

The only body of young men known to us as undergoing systematic training, with a view to their entering the architectural profession, are Professor Donaldson's students at London University College. The students at King's College are not, usually speaking, destined for the practice of civil architecture. Those of the Royal Academy and of the Institute receive no special instruction, and in none of these cases is architectural drawing at all a part of the course. Drawing and elementary instruction are, we believe, given to a certain extent at South Kensington, but they do not go, so far as we are aware, to any great length.

Here, then, is the first essential to the creation of a body of students apparently wanting, namely, a complete college or other place of instruction. Much of this want may be supplied, and is supplied, by Professor Donaldson; but there is no course of drawing connected with his classes, and a large proportion of pupils and others do not attend them at all.

Nor does private instruction take the place of public or academic tuition. The gentlemen who take pupils are so circumstanced, for the most part, that they could not, if they would, do more than afford occasional and irregular superintendence, and give the young men an opportunity of seeing practice and sharing in the work of an office. Is it to be wondered at if this system produces results not altogether so satisfactory as could be wished? Pupils seldom attain skill in draughtsmanship, or great acquaintance with the fundamental principles of their profession, till they have pretty well concluded their articles, and, in fact, often do not begin to study or work at all till the time when they ought to be far advanced. Familiarity with office routine and a good deal of miscellaneous knowledge is often picked up half-unconsciously, and men so trained frequently come out at last successful and competent; but had the time lost in their early years been carefully employed, they would have been able to master many things which they must be content to leave unattempted or but half accomplished, or would have been thoroughly well-grounded instead of possessing little better than a smattering of knowledge.

This subject ought therefore to receive serious attention. The scheme of the voluntary examination, which has been for so long under consideration, will be a first step. It may only prove a corroboration of our idea, that the number of genuine architectural students is but small; but whether it only does this or succeeds in doing more, and brings to light an amount of talent and training which we had hardly believed to exist, it will be useful, and forming, as it will, an index by which to test the advance of education, it will be a valuable addition to our permanent institutions. It is, however, nothing more than a test and a somewhat doubtful stimulus. Something further is needed, and the Institute is the body which ought properly to furnish that something.

To return, from those who are to be, to those who now are members of the architectural profession, we regard it as a matter for sincere congratulation that the central society has met with so much prosperity and done so much work, and that its members and officers, notwithstanding great divergence of opinion, have been able to work together so harmoniously and in so friendly a spirit. There are some callings in which the proverb about "two of a trade" is believed to meet with constant illustration. This could hardly be said, even by Mr. Cole himself, of the fraternity of architects; and when we reflect how often the members of this profession are brought into competitive rivalry, and even called upon to oppose each other in legal causes, arbitrations, and settlements, it is no small compliment to the good feeling and honourable conduct of business habitual among them to say that in no profession is there a more generally diffused feeling of friendliness and cordiality than exists in the architectural profession. We trust that this may always remain so, and we firmly believe that if the transaction of public business and the diffusion of technical information be the ostensible objects of the Institute, its most important office is that of promoting personal friendship, and a general feeling of cooperation and mutual esteem, among its members.

THE ORDNANCE SURVEY.

IT is scarcely possible to over-estimate the value to the country of the labours, during the past ten years, of the staff of officers and men engaged in conducting the Ordnance Survey. With an amount of skill and talent which is worthy of the highest commendation, they have pursued the object they set out to accomplish, and their gigantic task has proceeded so far with complete success. Under the enlightened and scientific guidance of Sir Henry James, the Ordnance Surveyors have penetrated into every district of the United Kingdom, and the results of their assiduity appear in the form of a series of Maps, which for accuracy and minuteness of detail have not been equalled since the world began. Apart from the national feeling of pride which legitimately arises from the knowledge that we possess perfect delineations on paper of all the geographical and topographical peculiarities of the land in which we live—apart from that feeling of pride, there remains the satisfaction of knowing that those delineations are of great practical use. In all the operations of the Civil Engineer, for example, the Ordnance Maps are valuable, because they are reliable; and in the formation of railways they are of especial service. It is unfortunate that the action of Sir Henry James and his co-adjutors should have been impeded by the intermittent way in which money has been voted them by the House of Commons. A Select Committee of the House is now sitting in reference to the subject, and it may be trusted that hereafter the movements of the Surveyors will not be unnecessarily hampered. The Committee, indeed, although their labours are as yet unfinished, have given utterance to a rather strong opinion in favour of apportioning a constant sum of money annually towards the accomplishing of the National Survey. They state that "it is desirable that the Survey should be conducted as rapidly as possible, and that the sum voted for it should not vary in amount from year to year, as the frequent changes that have been made in the scales and the mode of conducting the Survey have led, according to the evidence of Sir Henry James, to the waste of £30,000 in the past ten years. That it has been stated in evidence by the Director of the Survey that an annual grant of £90,000 for twenty-one years would enable him to complete the North of England and Scotland and the Irish revision on the scales now in progress, and the South of England on the scale of 1860; and that he has further stated that the Survey might be completed in twelve years if the grant were increased to £150,000, thereby ultimately effecting a considerable saving."

It rests, of course, with the House of Commons to give effect to the views of the Committee, and now that the scale upon which the maps should be finally constructed has been determined, and the work is so far advanced, there seems to be no reasonable excuse for retarding the progress of the surveyors by withholding from them the proper funds. In consequence of the reduction of the vote last year by the sum of £20,000, no less than 180 surveyors and draughtsmen were discharged, and of the remaining number (1,357) 340 have been employed upon the survey in the South of England and Wales, required for the execution of works for the defence of our Naval arsenals, and for the purposed central Military Depot at Cannock Castle. This division of the surveying force has retarded the completion of the surveys of the counties of Northumberland and Cumberland, and it is likely that another year will elapse before that work is effected. We are very far from being advocates of a wanton expenditure of the public money, but in the Ordnance Survey we see a work which, as we have said, is of the highest practical value, and we therefore do not hesitate to recommend the House to give tangible effect to the opinion of its Select Committee.

A recent visit to the Ordnance Survey Office at Southampton, and an inspection of the whole of its internal arrangements, have convinced us that the means for carrying out the Survey are adequate and complete, and that they could scarcely be in better hands. The systematic way in which every department there is managed, and the judicious division of labour throughout, tend to make the establishment a complete and harmonious whole. The mixture of military and civilian artists and workmen observable in the leviathan work-rooms at Southampton does not interfere disadvantageously with the progress of the duties carried on there. On the contrary, it incites a degree of emulation which is of much value. The Ordnance Survey Department is singularly well placed as regards its sanitary condition,—just without the town, and on the old coach-road to London. It stands on an acclivity and covers a large area. The principal façade is handsome and of recent erection, and there is a noble court-yard in front of it, protected by iron railings and gates. In this principal building are placed the offices of Sir Henry James, Lieut.-Colonel Cameron, and others of the ruling officials. A flight of steps at the back conducts the visitor to a quadrangle, and surrounding this are the various drawing-offices and workshops; behind these again are the observatory, the photograph-rooms, and the standard bar house. So much interest attaches itself to the premises and operations constantly

going on in the Survey department, that we feel almost disposed to describe them. Possibly at some future time, indeed, we may do this, for it is a question if space could be more advantageously occupied. Few who see the finished Ordnance Maps are aware of the immense amount of care and skill which have been expended in their production.

At present it may be well to confine our further remarks principally to what has actually been accomplished and what is proposed this year to be done. Taking, in the first place, England, and the survey of it on the scale of 1860, it may be convenient to throw the details into tabular form:—

Locality.	Area in square miles.	Surveyed square miles.	Published square miles.
Durham . . .	1,097	1,097	1,097
Westmoreland . .	758	758	758
Northumberland . .	1,952	1,643	253
Cumberland . . .	1,565	1,211	39

The number of square miles surveyed on this scale during the year was 422, and the plans of 440 square miles have been published.

The counties which have been surveyed and published on the 6-inch scale *only*, are Lancashire and Yorkshire. The 6-inch maps are now engraved and published for:—

	Square miles.
Lancashire	1,905
Yorkshire	5,983
Durham	868
Total	8,756

The 1-inch scale—that is, one inch to the mile—has been most largely worked up to the present time; and consequently almost the entire map of England to that scale is complete. The area of England is set down, according to actual measurement, at 58,000 square miles. The area for which the hills have been completed is 53,234 square miles. The only portions incomplete are the parts of Northumberland and Cumberland, before alluded to, and where the survey languished from lack of funds. All the principal towns of the kingdom have been laid down to much larger scales; in some instances, indeed, to 12-foot scales. As regards military surveys made during the past twelve months, the principal are those about London, Chatham, Harwich, Dover, Coast of Sussex, Portsmouth, Isle of Wight, Torbay, Plymouth, and Pembroke, and these were made on the same system and scales as those adopted for the Ordnance Survey of the kingdom during the present financial year. Should the finances allow of it, the whole of these will probably be finished.

The area surveyed in Scotland during the year 1861 was 327 square miles for the 1860 scale plans, and 451 miles in the Highland districts. The number of square miles published is 528. Twelve counties of Scotland have been surveyed on the 1-inch scale, and the surveying of seven other counties is in progress. The area of Scotland is set down at 30,000 square miles, and as regards the 1-inch scale, the map is completed for 3,522 miles, whilst a much larger area is finished in outline. The progress in the hill engraving during the year 1861, was 657 square miles. The principal towns in Scotland were surveyed, and maps of them engraved and published on the large scale spoken of in reference to English towns. The publication of the plan of Glasgow, in 155 sheets, and of Dundee, in 59 sheets, was completed during 1861, as were those of Airdrie, Galashiels, Hamilton, Irvine, Jedburgh, Kilmarnock, Strathavon, and Rutherglen.

As touching Ireland, which it would be unjust to omit mentioning, although at the expense of protracting this paper beyond the limits we had assigned to it—as touching Ireland, every county has been engraved and published, "but in consequence," says Sir Henry James's Report, "of the instructions under which the Survey was commenced, the plans of the northern counties, which were the first surveyed, are without that amount of detail which has subsequently been found to be absolutely necessary for the local valuations and assessments, and hence it is that we are revising those northern counties at a great additional expense." Eight counties have been revised, and two others are undergoing the process of revision at present. As in the cases of England and Scotland, the large towns of Ireland have been revised on a larger scale, though not many of the maps of these have been as yet published.

The area of Ireland is equal to 32,813 square miles, and the whole has been drawn and engraved in outline on the 1-inch scale, although maps for 1,863 square miles only have as yet been published. During the year just past, 2,569 square miles were engraved in outline, and 434 miles completed with the physical features. In respect to the surveying campaign for the present year, it may be stated that the posts of command are thus distributed: Sir Henry James, Director; Lieut.-Colonel Cameron, executive officer in

charge of the General Correspondence, and the publication of the maps of Great Britain; Captain A. R. Clarke has charge of the Trigonometrical branch of the work, and of the initial levelling; Captain A. De C. Scott has charge of the zincographing of the manuscript plans, and of their reduction to the 6-inch, and 1-inch scales. In addition to these, there are divisional officers stationed in various parts of the United Kingdom, so that complete arrangements exist for carrying on the great and truly national work.

The sale of Ordnance Maps during the past year reached upwards of £8,000, and it does seem probable to us, that after the work of surveying is once accomplished, their sale, for they may then be reproduced at small cost, will be highly remunerative. If we have succeeded in throwing some little light upon the subject chosen for this article, it will for the present content us; but we must return to it ere long.

EXHIBITION GOSSIP.

THE days of admission to the International Exhibition by payment of a British crown are nearly over, and the commencement of the ensuing week will inaugurate a more numerous attendance of visitors than it has hitherto been the duty of the notorious turnstiles to register. It is probable that this change, while bringing more gists to the mill, will also add more grease to the wheels of the machines and cause them to keep better faith with the public. As the register now reads, the comparison of admissions to the '62 Exhibition with that of '51, is most unsatisfactory. The cause of this we are led to conjecture, and we venture to allege, arises from a combination of circumstances, some of them uncontrollable and others not so. Depressive trade has largely influenced the falling off of the number of visitors, shortness of time in the carrying out of the scheme has deterred many would-be exhibitors from occupying space and lending their aid and influence. The growing dissemination of complaints through the various organs of the Fourth Estate have, however, served to thwart the enthusiastic anticipations of the overweening Commissioners. Instances have been mentioned where exhibitors, who feel aggrieved, have possessed the power to materially influence a whole district in a manner anything but favourable to the Commissioners or their scheme.

The past week has been fruitful in the extreme in effecting final arrangements of the unfinished courts, particularly in the French, American, and Dutch departments; and judging from our latest inspection, we expect an early completion of the work yet remaining to be done. Stands are fast being occupied by male and female attendants, owing, we suppose, to the withdrawal of the stringent and arbitrary instructions given to the superintendents of classes. This act will be the means of imparting life and activity to the interior of the building in a far more appreciable manner than the irregular booming and clanging of bells. The Exhibition once having passed into the hands of the half-crown and shilling paying community, will shake off its hitherto marked cold reserve. We wish the *beau monde* would condescend to give up their Saturday visits in favour of the half-holiday industrial classes.

The Process Court strikes visitors with much that is ingenious and interesting. T. R. Pinches and Co.'s Exhibition Medal Press will be found at the southern end of the court adjoining the Pottery class, and is in constant action. This ponderous machine is the production of Messrs. Watt of Soho Works, and it yields a pressure of about 12 tons. Seemingly the dies meet with a lightness and grace that would scarcely squeeze a finger, but in reality they strike with the force above mentioned. Pure tin medals are struck off and sold at 6d. each. Copper ones, after repeated stamping and annealing, at 2s. 6d., and 3s. 6d. each. Silver medals in morocco case at 17s. 6d. These prices seem somewhat high, but in all cases where a heavy royalty has been exacted by the Commissioners, as in the case of refreshments, &c., the public will find that heavy prices are essential if the speculators are to turn an honest penny. We hear of £2000 being the sum paid for the privilege of producing and selling these *souvenirs* of the building. The process of medal-making will be pleasing to thousands of persons, and more so from the fact that the exhibitors allow a portion of the manipulation to be performed by the purchasers. Two stalwart able-bodied artisans, on a raised platform, swing the horizontal beam of the screw until a few threads have been run down and the metals meet, which is a period of a few seconds. The design of the medal may be characterised as a happy one in one respect, as it gives Captain Fowke the credit of having erected a building with a central dome, which virtually and unfortunately is not the case. True, there is a qualification in the description in the words "West front," but that is no reason for striving to conceal or falsify the actual fact of the building having two far distant domes. The other side of the medal represents peace and welcome being offered to all nations by two emblematic figures seated, holding flags and an olive wreath, and surrounded by objects of art, science, and industry.

In juxtaposition to this process illustration is that of a silk velvet loom in action. Here, at intervals, may be seen the raw material woven deftly, tightly, and regularly into piece velvet. A happy contrivance we noticed is the use of double shuttles and bobbins, and brass rods whereon to strain the threads as the work proceeds. These rods or, more correctly speaking, fine wires, afford the necessary means for severing the threads to produce the softness peculiar to velvet, and at the same time the wires are alternately extricated without slipping threads. The weaver in charge manifests considerable dexterity. The machine is neatly contrived, and seems free from complexity.

Passing onwards, we reach Simpson's sewing machine, from Cheap-side, possessing, we suppose, the requisites of a useful machine; but as the competition in these articles is very keen just now, a more detailed observance must be deferred till another visit. The paper-collar embossing machine, on the left, excites much interest. Specimens of collars, cuffs, wristbands, &c. are exhibited, and are really of such good workmanship as to vie with similar articles of a more costly material. We perceive that agents are wanted for the sale of these articles, which are nominal in price, and eminently serviceable. The only process exhibited is embossing—the paper outlines being the work of steam power apart from the building. A namesake, and we believe relative, of the present Post Office Secretary, exhibits a new letter-stamping machine, but it was not going when we inspected it. Mr. Reynolds exhibits his process of making pipes complete from the clay. The stand is a few yards distant on the right of the medal press. The arrangement and details of the process are creditable to the exhibitor, and worthy of the space assigned to it. A highly interesting feature (specially removed from Class 10) in this department, and one which will, we are sure, be well patronised, is a plate-glass pyramidal stand of patent moulded carbon filters by Messrs. Atkins & Son, Engineers, of 62 Fleet Street. Blended with the stand is a novel description of fountain, such as is exhibited at their city depot. It is constructed of glass tubes, through which purified air and water circulate. At the base of this stand issue six outlet pipes, from which flows filtered water for the use of visitors to the building. Filters and fountains arranged in the shape of a "trophy," must suffice as our notice of this stand for the present. This stand, placed in the nave, would, we predict, have escaped the censure of Mr. Cole, and been a pattern to the Exhibitors, who have been suffered to build huge unsightly erections. We shall return to this stand and its utility, when considering the class to which it legitimately belongs.

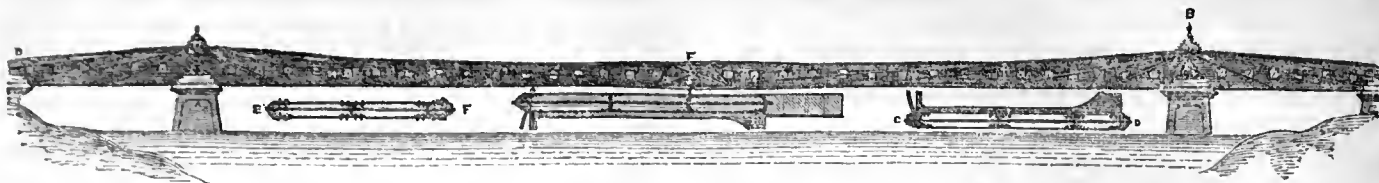
We must now regret the absence of more materials to work upon in the Process Court, if it contains nothing more than what we saw. Where are the fancy glass-blowers and the funny button-makers, whose expeditious manipulations are always a source of pleasure to the curious sight-seers?

Our presence in this Court naturally led us to scrutinise rather closely a recent importation from the great nave—we mean the condemned portion of Mr. Cremer's toy "trophy." True his "trophy" was not worthy of its first position, but notwithstanding the sweeping sarcasm which has been heaped upon it, we must not forget that the worth of toys in educating the young is considerable, and that toy-making is the means of employing whole communities of workpeople. The fragments of the "trophy" are here displayed with a considerable degree of taste. To render it effective, the background—the wall—should be of a contrasting colour; as it is now, wall and objects have no diversity as regards colour. Might not a few pounds have been spent in plastering the walls and colouring them properly with neutral tints? The large sums of money which have been expended in producing satisfactory hangings for backgrounds by the Americans and others, might very justly be debited to the Commissioners, *exchequer*.

The redeeming features of the past week's programme of procedure have been the intended early issue of shilling tickets, the re-formation of the objects in the nave, the introduction of musical instruments, and the improved entrance to the eastern annexe, all of which were the results of suggestions pointed out by the public press. We trust that the suggestions of "the gentlemen of the press" will throughout be treated with the same respect, as deference to popular criticism will much affect the success of the whole enterprise.

METROPOLITAN BOARD OF WORKS.—At a meeting of the Metropolitan Board of Works, to be held this day (Friday), the following recommendations from the Main Drainage Committee will be taken into consideration:—"That during the absence of the Chairman of the Board (owing to ill-health) a chairman be elected on every Friday, or other board day, from the members present at the meeting of the Board." "That each committee be directed to select, at their next meeting, from their number a chairman and vice-chairman, who shall so act, during the pleasure of the committee." "That during the absence of the chairman, Wm. Hy. Dalton, Esq., be authorised to countersign cheques in lieu of the chairman, and be requested to attend on the occasion of every payment made at the office, for the purpose of handing over the cheque to the party entitled to receive the same; and that, with this exception, the present regulations with respect to the drawing of cheques and mode of payment be continued." "That during the absence of the chairman, the clerk of the Board do countersign the documents signifying the approval of the Board to applications for special buildings under the Metropolitan Building Act, for the formation of streets, &c."

MEMORIAL OF THE LATE PRINCE CONSORT AT BALMORAL.—The *Aberdeen Herald* says, at a meeting of the tenants on the royal estates, held at Abergeeldie lately, it was finally resolved to erect a granite obelisk as a monument to the late Prince Consort. The place of erection was left to the decision of the Queen; and she has, we understand, decided upon a little wooded "knowe" to the south-west of the castle, and near the road. Various designs for the monument were submitted for the approval of her Majesty—the one she has chosen being, we believe, by Mr. Becton, resident at Balmoral; and as it has already been contracted for, the work will be proceeded with immediately.



A NEW PLAN FOR BUILDING BRIDGES.

MR. SEDLEY, of 210 Oxford Street, has just protected by letters patent a new plan for building bridges in wood and iron of large spans. We have seen a model of the bridge, and consider it well worthy of the consideration of architects, builders, and mechanical engineers.

Models of the bridge on a scale of 60 ft. to 1 ft., and 28 ft. long, and weighing 24 lbs., may be seen at the International Exhibition, Museum of Patents, South Kensington, and the Architects' Museum, Conduit Street. Engineers and architects will be allowed to test them without reserve, having first agreed upon the weights such structures ought to bear.

The inventor claims in his patent for a bridge which can be constructed of wood or iron, or wood and iron and steel combined. One of the new features of this bridge is that the suspension forms a part of the tubular construction, and is entirely independent of the piers or abutments, and forms no part of them, and so differs entirely from any bridge that has hitherto been built or attempted. On other points there is also a marked difference. The inventor proposes to build his bridge on shore on a suitable tram or railway, and when completed and fairly tested, to launch it out as far as desirable over the abutment, always reserving on shore a sufficient part or portion to counterbalance fully the part projected out. In bridges up to 500 ft. span, the inventor proposes to build the bridge entirely on one side of the river or valley intended to be crossed, and then to launch it out over the river or valley till the projected end is received on the abutment on the other side or shore of the said river, &c. But when the spans exceed 500 ft., he proposes to build one half of the bridge on each shore, and, when completed, both are run out intermediate of the width of the river and united in the centre by means of the shoe S shown in the sketch. The centre is also further strengthened by the application of arched flanged girders, which are made of great strength, consistent with lightness, and for this purpose it is proposed to use steel, or iron and steel combined. Great economy and simplicity are claimed for this method of construction, as no subaqueous piers or works are necessary, and single spans up to 1,500 ft. in width can be constructed at any height without risk or difficulty, as the work may be tested daily whilst in progress. In the diagram shown of the bridge it will be seen that it is composed of a series of long rectangular girders piled on each other, varying in size and thickness according to their distance from the centre of the bridge. The roadway is suspended by means of bars passing through the centre of these girders. The suspension bars or plates H perform only a limited office in the place of the usual catenary curve.

Sections of the girders over the piers are shown at A B, of the in-shore end at C D, and of the middle E F. It is quite evident that in this method a bridge of single width may serve a double purpose and be useful for ordinary and railway traffic.

ECONOMIC MUSEUMS.

MR. THOMAS TWINING of Twickenham has recently done "the State some service" by calling into existence an Economic Museum, which deserves the attention of the universal public.

That gentleman, says a contemporary, in 1857, addressed a communication to the Chairman of the Council of the Society of Arts, in which the following passages occur:—"The experience acquired since 1847, as a member of the Managing Committee of the Labourers' Friend Society, has led me to a conviction that much of the privation, discomfort, and ill-health to which the working-classes are subject in this and other countries, and many of the errors and failures of the friends of the poor in their benevolent endeavours, might be avoided by a more general diffusion of that kind of practical knowledge, in matters of domestic and sanitary economy, which may be termed the science of common life. I perceived, at the same time, that the only way to make that knowledge popular was to offer it in an easy, familiar, and attractive form; and thus I was naturally led to the plan of establishing exhibitions and permanent museums of domestic economy."

Mr. Twining had, in fact, been quietly working out this theory since the year 1850. In 1855 it was fully developed in a memorandum addressed by him to Lord Elbrington. Copies of this memorandum were printed, and extensively distributed throughout Great Britain and the Colonies. It was an able document upon the subject of which it treated, and we may judge its general character from the following extract:—"Manufacturers, tradesmen, and mechanics work their inventive abilities (as a rule) in a business-like manner. Men of science, more especially so-called, have not yet, generally speaking, attained to such a standing in this country as to be able to lay aside the thoughts of themselves and their families. Even amateurs, though their position may raise them above pecuniary considerations, are seldom above the temptation of bringing out that which may be conspicuous, in preference to that which may be useful. In short, the homage of knowledge and ingenuity is very naturally paid to those who can best give an acceptable return; and whilst every appliance of science and art is

called into requisition to meet the fastidious fancies of the rich, and to supply novelties for the cravings of fashion, the requirements of the humbler classes are comparatively overlooked."

The writer evidently saw one of the great causes of the destitution and criminality which disfigure the annals of our own, and other countries, and he determined also to point out the remedy, and, if possible, employ it. The publication of the memorandum and the persevering industry of its framer were soon responded to and rewarded. Economic Exhibitions of a temporary kind were inaugurated at Paris in 1855, at Brussels in 1856, and at Vienna in 1857. These were all successful in a very high degree. At the South Kensington Museum, too, Mr. Twining succeeded in getting a section appropriated to the purpose he had in view. This was called "The Department of Domestic Economy, comprising Illustrations of Every-day Life for the Working-classes;" and of its nature and usefulness it is unnecessary for us here to speak.

Encouraged by the success of the embryo collection at South Kensington, which had been formed there permissively and experimentally, Mr. Twining removed the exhibition to the Polytechnic Institution, and has now finally removed it to Perryn House, near the railway station, Twickenham, for convenience and more complete development. It is, in fact, as the example for a grand Metropolitan Economic Museum, and for branch museums throughout the country, that the founder of the present institution at Twickenham desires that institution to be regarded. He is, indeed, of opinion that Economic collections should be established on all hands, whose object would be to impart to all classes, and especially to those whose income is small, the "knowledge of common things, or science of every-day life." He would have them show, for instance, what sort of dwellings they should live in to secure health and comfort, and what improvements in household management may be derived from the discoveries of science, or from other sources. In short, he would have the Economic Museum teach the working-classes how to live with judgement, and get the best money's worth for their money.

It would be difficult to conceive more praiseworthy objects than those sketched out by Mr. Twining, and it is satisfactory to know that they are not the visions of a philanthropic dreamer, but the aims of a sterling, steadfast, and determined man.

In the establishment of the Economic Museum at Perryn House, we can see an earnest of future and permanent good to the working classes of this country. It is an exemplification of what the will and energy of one man may accomplish, when the will and energy are governed by right principles and guided to practical ends. We do not despair, indeed, of seeing "London with its Economic Museum on the fullest scale, provincial towns with appointed collectors, Mechanics' Institutions, with rooms allotted to the illustrations of common life, Lecturers supplied with portable Economic Collections and Educational Establishments, down to Village Schools with their Economiums or Cabinets of Useful Objects." When this state of things shall have arisen—and it is no utopia that we are picturing—how much of misery, how much of degradation, and how much of *crime*, will be in a fair way of being banished for ever from among us? The barriers between classes which selfishness has created, and which ignorance maintains, will be thrown down, and that sympathy, of which the good Judge Talfourd spoke, and which, with his dying breath he invoked, will disseminate its divine influence on all around. The great merits of Mr. Twining's scheme of popular education, are its practicability and freedom from any shade of sectarianism. Its advantages will not and cannot be confined to any one class, sect, denomination, or sex, but to the humbler portion of the community, irrespective of all distinctions, the good resulting from its realisation must be considerable.

Amid the din and clatter about iron ships, rifled guns, submerged vessels, projectiles, targets, and fortifications, it is pleasant to turn aside for an instant and look approvingly upon the efforts which are being made for the amelioration of the troubles, difficulties, and cares which beset those whose "lot it is to labour."

The Perryn House Economic Model Museum is divided into nine classes, as follows:—

- Class I.—Building Designs.
- Class II.—Building Materials.
- Class III.—Furniture.
- Class IV.—Clothing.
- Class V.—Food, Fuel, and other Household Stores.
- Class VI.—Health.
- Class VII.—Home Education, Self-Instruction, Recreation.
- Class VIII.—Miscellaneous.
- Class IX.—The Library.

The Museum is open to the public only on Wednesdays and Saturdays from 2 to 5 p.m., on the presentation of tickets of admission, which may be obtained from Mr. Twining, or at the Society of Arts, Adelphi, London. The founder of the Museum is entitled to expect cooperation, and we cordially invoke its aid in so good a cause. The Library as it exists at present is admirable, but its extension by donations of eligible books is a thing to be desired.

PUBLIC MONUMENTS.

THE last number of the *Edinburgh Review* contains an admirable article on public monuments. After the reader has perused the following extract, probably he will refresh himself still further by reading the article itself.

"Amongst the numerous monuments which have been raised in our time, two of the best are the monument to Sir Walter Scott in Prince's Street, and the monument to Pascal placed under the elegant and graceful tower of St. Jacques, in Paris. Doubtless, these works derive an additional charm from the associations they awaken. Scott, enthroned in his magic chair, surveys 'his own romantic town,' and many of the scenes to which his muse has given an imperishable interest, whilst the Gothic structure above him is itself consecrated by his genius. Pascal stands beneath the tower, from the top of which he made his own experiments on the pendulum, and which has now, in the mutations of French society and architecture, become the monument of his fame. These may be exceptional instances; but they serve to show what pleasing results are to be obtained by a judicious combination of sculpture and architecture, where each would be dull and lifeless without the other. They are examples, too, of statues placed in or under open buildings, an expedient which protects them from the direct action of the weather, whilst it serves to exhibit them in the most favourable light.

"To speak of single statues or monuments on a smaller scale, although that is not the subject to which we designed principally to direct these remarks, it is evident that the nation greatly needs a suitable repository for such memorials. Nothing but the want of such a repository could have induced the Deans and Chapters of the metropolitan cathedrals to turn those edifices into museums of sculpture, peopled with the effigies of departed greatness. The great Abbey and the Dome of St. Paul's are hallowed by the remains of the illustrious dead who rest within those walls, and the monuments raised there, when they are of a sepulchral character, are strictly in place. The proposal to make the monument to the Duke of Wellington a mortuary chapel in St. Paul's is perfectly appropriate, if we may dare to hope that the execution will answer to the conception. Westminster Abbey contains no less than sixty-two recumbent statues of life-size, some of which—such as the statue of Queen Eleanor—are of extreme beauty; the tombs of Henry VII. and his queen, by Torrigiano, are fine works in bronze; and the recumbent monuments of Elizabeth and Mary Queen of Scots, supposed to be by Nathaniel Stone, are characteristic and interesting. But we view with different eyes the forty-six portrait statues, life-size or colossal, and ninety-three busts or medallion portraits, which have been crowded into this sacred edifice. To erect a statue of a great man in a church, simply because other great men are buried there, is an offence against good taste and good feeling. The statue of the late Sir Robert Peel, by Gibson, in Westminster Abbey is a complete example of everything that is most objectionable; and, with the strongest desire to do honour to that eminent statesman, we wish that his figure were in any other place and in any other costume. As far as Westminster Abbey is concerned, the question is solved to a great degree by the want of space for more monuments; but from the venerable and delightful associations connected with that spot, it is much to be desired that some fitting extension should be given to the monuments in the precincts of the Abbey, by executing the restoration of the Chapter House, proposed by Mr. Scott some years ago, or by converting the cloisters into what they strictly ought to be—the Campo Santo of the Royal Minster of England.

"One of the finest parts of Barry's conception for the Houses of Parliament, is the skilful conversion of Westminster Hall, the most time-honoured and august edifice in this realm, into the approach to the Chambers of the Legislature. We see no reason that this great Hall should not be adorned by a certain number of statues of illustrious statesmen—indeed, we think that there is no other place so fit for them. The light, which is now defective, might easily be improved by introducing plate glass into the lower tier of windows, and the effect of the Hall, so decorated, would be one of the grandest things in Europe.

"A very large proportion of the monuments which now decorate the capitals and great cities of Europe are of recent execution; and probably there has been no period since the Roman Empire in which so many statues have been erected as in the last fifty years. But the same feeling has everywhere invoked some form of art, however rude, and seeks to attach the perishable record of frail humanity to some monument of indestructible permanence or of commanding beauty. The stones raised by the Patriarch on spots hallowed by revelations from heaven; the nameless tumulus which looks out on the Northern Ocean: the Pyramids, in whose sepulchral recesses modern science has read the names of forgotten kings; the granite obelisk, whose shadow has marked day by day the passage of three thousand years, like a needle on the dial plate of time; the dome-shaped tower which covers the relic-shrine of Anuradhapura, or the prodigious Minaret of Victory which towers above the ruins of Old Delhi; the sculptured forms of Greece, which art made the counterfeit of life, and superstition the object of idolatry, until the pagan world was peopled with a race of ideal beings, exalted by the imagination of the people and the artifices of the priesthood to the rank of gods; the stripped oak, on whose shattered branches the warrior hung the trophy of his captive's arms; the arch through which the victorious Imperator led his triumph to the Capitol; the lone column which he encircled with his Dacian conquests—were all different modes of setting up some beacon above the waters of oblivion—were all attempts to associate some permanent material object with the fame and love clinging to a human life. The pious veneration of the

Middle Ages for the memory of the great and the brave took the form of elaborate tombs,—the fit resting-place of a Christian knight, surrounded by the heavenly patrons of his faith and the emblems of his salvation. In Italy the splendour of the arts almost eclipsed their application to the memory of the dead, and the marvellous Chapel of the Medici is the monument not so much of Lorenzo and Julian as of Michael Angelo. From this stage the transition was rapid to courtly adulation and allegorical imagery. A monument loses its real importance by as much as it departs from simplicity, reality, and truth. It is easy to trace in any long series of monuments, erected under similar circumstances, such as the Papal tombs in St. Peter's, the progress or decline of correct taste in the centuries which have succeeded the erection of the edifice in which they stand.

"The inventory of the public statues of London is not a creditable one. We have fifteen kings and queens, namely, the grand statue of Richard Cœur de Lion in Old Palace Yard, Elizabeth, formerly at Ludgate, now in front of St. Dunstan's, Charles I., Charles II. (supposed to be the statue in Soho Square), James II., the fine work by Gibbons behind Whitehall, William III. in St. James's Square, three Queen Annes, two figures of George I., one of George II., two of George III., the colossal statue of George IV. in Trafalgar Square, and William IV.—a coarse statue in the approach to London Bridge; the Dukes of Cumberland (the butcher), Kent, and York; three Wellington statues, Nelson, Napier, and Hawke; Francis, Duke of Bedford, Fox, Pitt, Canning, Peel, and Lord George Bentinck; Major Cartwright, Sir Hans Sloane, and Dr. Jenner. Statues of Stephenson, Brunel, and Lord Herbert are in preparation. The list is a lamentable one; it contains not one of the first names which have dignified English literature or philosophy; and it shows that these statues have for the most part been raised by courtly sycophancy or party enthusiasm—not by the deliberate veneration of the nation for its greatest benefactors. The present mania for 'testimonials' tends to multiply this evil, and to raise statues to men whose very names will be forgotten in another century. We have sometimes thought that it would be well if these modern candidates for posthumous fame were subjected to the same test which the Court of Rome applies to the beatification of its saints, and that no one should be added to the calendar of heroes and sages until half a century has passed over his tomb. Contemporary monuments are apt to partake too much of the zeal of adulation or the poignancy of personal regret. In some cases, indeed, time and the justice of posterity have supplied what was neglected at the moment of death. Thus the county of Salop has recently raised a forcible and dignified statue of Lord Clive; and the town of Grantham now boasts a statue of Newton, which was inaugurated in September, 1858, by Lord Brougham, who pronounced one of his most finished oratorical compositions on that occasion. Well might he exclaim, that it was a just subject of astonishment that to so renowned a benefactor of the world, exalted to the loftiest place by the common consent of all men, no public monument should have been raised in his own time, or for a century and a half after his death. The statues of Newton in the ante-chapel of Trinity, Cambridge, and in Westminster Abbey, are appropriate memorials of him in the College he adorned and over the grave where he lies. But the genius of Newton ranks him with the powers of the first order. It may be said of him with greater truth than of the philosophers of old, that the universe itself is the monument of his fame; but it is a reproach to the nation that no means should have been found to place more conspicuously before the eyes of future generations that dignified form, that serene and speculative countenance, which so nobly distinguish the first of England's philosophers."

ELVETHAM HALL, HANTS.—The works at this place (the seat of Lord Cathorpe) are rapidly approaching completion, and when finished will greatly enhance the reputation of the architect, Mr. T. S. Teulon. The exterior has been nearly rebuilt, and presents a most imposing general appearance. The interior work and decorations (by Harland and Fisher of London) are in capital taste, and on a most liberal scale. The walls of the great hall are covered by an inlaid species of fresco painting, in a diaper pattern, as far as the corbels supporting the timbers of the ceiling; from thence to the ceiling a continuous frieze, of brilliantly coloured shields, is arranged in genealogical series. The ceiling itself is in fresco, in an ornamental design of flowers and foliage, further enriched by subjects from the death of King Arthur in the centre, and, in medallions round these, by portraits of his queen and knights, in flat tints. The walls of the corridor leading from the hall to the grand staircase are treated like those of the hall itself. The ceiling is painted in a geometrical arrangement of bright colours, and the staircase ceiling is decorated by a richly gilt central Sun, round which are arranged, in medallions, the signs of the Zodiac, the Four Seasons, and Day and Night, all in fresco. The library has upon its ceiling authentic portraits of the statesmen and men of letters of the time of Queen Elizabeth, surrounded by foliage and ornaments characteristic of the period. The ceiling of the drawing-room is divided by timbers into various geometrical forms; the panels thus created being filled with an ornament of brilliant colours, with, in the centre of each, a head of one of the characters in Sir Walter Scott's "Kenilworth," upon a gold ground. The ceiling of the dining-room is in panels, which (upon a delicate blue ground) are entirely covered by interlacing branches of various fruits, amongst which the fig, vine, orange, and peach, are conspicuous, painted from nature, the intervening timbers being partially gilded and painted in various patterns. The effect of the whole is very refreshing, and the general ceiling treatment throughout the entire building renders this an important example of that application of art.

LONDON ROADS AND RAILWAYS.

AS if to make amends for a long state of apathy, the employés of the Board of Works are pushing on their operations in regard to the formation of the new street from Blackman Street, Borough, to Blackfriars' Road, with great vigour. At the Borough end of the new thoroughfare the results of their recent labours are especially apparent. For a considerable distance the pavements are completed, and the paving of them with granite is in a fair way of being so. The value of this street when finished and opened will be great. The difficulty of reaching London Bridge from Stamford Street, Blackfriars' Road, except to the initiated, has hitherto been immense, especially as respects vehicular conveyance. There was nothing for it but to go up the road to Union Street, a sufficiently narrow line of communication, and through it, if found possible; or else to take Holland Street, and then tempt the "dark perplexed ways" of Bankside. The new street passes through hallowed ground, as some would term it, for the supposed site of the theatre where Shakespeare played in his own eternal dramas is in the line it takes. The site of the Bear Gardens, too,—to step at once from the sublime to the *barbarous*,—of three hundred years ago, will be covered by the rapidly advancing thoroughfare.

In close proximity are the works of the London, Chatham, and Dover Railway; and these are progressing with satisfactory spirit. The line will pass very close to the venerable and picturesque church of St. Saviour's, the appearance of which was not improved by the formation of the approaches to New London Bridge.

Apropos of the Chatham and Dover Railway, it is to be lamented that the City Authorities can come to no conclusion as to the kind of structure which shall supersede the rickety, dilapidated, and dangerous bridge of Blackfriars. Their hesitation on this point is a serious misfortune for the London, Chatham, and Dover Company, and retards their movements to a considerable extent. It seems to us that the proper solution of the question lies in the construction of a bridge of sufficient width and stability to sustain both the ordinary and the railway traffic. One or two plans for such a construction were submitted, we believe, to the Bridge Committee, but, so far, without inducing their concurrence. It would be difficult to conceive anything more incongruous or inharmonious than would be two bridges of a totally different character as regards architectural arrangement, spanning the Thames within a few feet of each other; and we hope that the people of London will be spared so humiliating an exhibition.

What with lines of railway in process of formation, the throwing of not particularly handsome bridges across the principal streets and roads, and the bustle contingent upon the anticipatory demolition of dwelling-houses, the Boroughs of Southwark and Lambeth are in a constant state of confusion. The landmarks of the "oldest inhabitants" are disappearing at the shrill summons of the coming locomotive; and the words of the poet,

"The presence of perpetual change is ever on the earth,"

are receiving literal illustration at the hands of the work-people of the two boroughs. Out of that chaos order will eventually arise, no doubt; and in the moral certainty that all the changes thus made will "work together for good," must be found consolation for the inconvenience arising from their procedure.

AUSTRALIAN ITEMS.

WE have not heard as yet that the accepted design for the new Houses of Parliament, proposed to be erected in Sydney, has been brought into practical requisition. Additions, however, have been commenced recently to the Sydney University buildings. The first portions of the design of these were completed externally three years ago—with the exception of the turrets on the tower. The works now undertaken will give an aspect of completeness to this part of the edifice. The shape of each of the turrets, which will be four in number, will be octagonal; the projecting mullions will support a mitre-shaped cupola, the successive ridges upon which are to be ornamented with rows of crockets, and above all will be a gilt spire. Between the turrets on each side of the tower, there is to be made a tasteful combination of crockets and finials, surrounding a clock face. A clock for one of these has been presented to the University by Sir Stuart A. Donaldson, and it is intended to supply the requisite gearing for each of the four faces to show the time. The contract for the masonry of the turrets has been taken by the Messrs. Loveridge for £1,247, and that for the carving by B. W. Hinton, for £300; the work to be completed in six months. The total sum voted by the Legislature for going on with the buildings was £5,000. The balance of this amount will be expended in flooring, plastering, and the internal fittings generally of the entire structure. The work will be highly creditable to the colonial architects, as it will in its entirety be permanently valuable to the rising generation of colonists. The very best proof of the prosperity and enlightenment of our colonial fellow-subjects is to be derived from their establishing such glorious institutions as the Sydney University.

The new Australian Museum facing Hydo Park, in the same city, has been commenced, and is in fact progressing rapidly. The foundations are in, and the walls of the north-eastern corner are above the race-course.

On the 17th of March, a meeting was held in Sydney for the purpose of devising means for completing the building of St. Andrew's Cathedral. The Governor of New South Wales presided on the occasion, and much sympathy with the object of the meeting was displayed by the numerous and influential auditory. The foundation-stone of the edifice was laid five-and-twenty years ago, and the annual expenditure since has amounted to £1,000.

Eventually it was determined by resolution to raise subscriptions for the carrying on of the work to completion. The fact is, that the colony twenty-five years since was much too young and not sufficiently wealthy to undertake with much prospect of success the erection of so ambitious and extensive a structure as St. Andrew's Cathedral. It cannot be said that the brick-work and masonry composing so much of it as is finished has been too rapidly executed. It is not "green" work, unless that kind of greenness which sometimes arises on buildings from dampness and neglect may make it so.

FIRE-PROOF STOREHOUSES.

Sir,—At a time when sundry minds are much disturbed respecting the storing of petroleum and other combustibles in large quantities, I desire to offer a few non-professional suggestions regarding the erection of Fire-proof Storehouses, for the consideration of professional persons.

1st. I propose that, where a plurality of warehouses are to be erected, they should be built, say 4 ft. apart, not to external appearance, but the space subdivided into a nest of flues, giving to each floor its distinct flue, and that the walls of such flues be carried not less than 12 ft. above the roof. These flues, in the event of fire, would not greatly encourage combustion, if at all, so long as the windows and doors were closed, while they would provide a safe outlet for smoke and flame, which would give immediate notice of the existence and locality of the fire, at the same time admitting the possibility of entering such floor without fear of suffocation, as the opening of the door would drive the smoke and flame with greater force toward the flue.

2nd. That as all existing floors, whether pugg'd or of brick, become red hot under a given degree of heat, I propose to substitute for them iron tank-floors; that is to say, to adopt a similar arrangement of girders as for carrying a brick floor, but to convert each space from one main girder to another into a watertight compartment, having all the cross girders so perforated as to admit of the free flowing of water; the depth of each floor-tank to be determined by the depth of girder required, the lower face forming the ceiling of one floor, and the upper the floor of the next. This kind of floor (so long as the flow of water was not interrupted) would admit of bracing to any extent, and would be much stronger than any other.

3rd. I would substitute for the present form of stanchion tubular columns, connecting the base of each with the floor-tank by a short tube or otherwise, and also perforate each near the cap, so that in the event of fire each would be converted into a steam-pipe; but as it is obvious in a case of fire that steam might generate rapidly, it would be matter for consideration how far the steam so emitted might be available in extinguishing the flames, or whether each set of columns should be provided with a tube to convey it outside; or, again, whether the existence of the flue would be a sufficient safeguard.

4th. That the loophole-frames should be of iron, and so constructed as to be capable of containing water, having a tube at the top connected with the roof, which I suggest should be a tank, not exceeding 3 feet in depth, and covering the entire building, less so much of it as might be required for light.

5th. That each window should be provided with a double-skinned iron shutter, fixed on the sliding principle, working in a groove upon the bottom of the floor-tank, having the bottom part open and the top closed so as to allow the steam to fill the vacuum and pass out of a perforation near the top of the inner face, also having the middle part of the bottom shorter to allow of the water flowing under.

6th. That the same principle be observed with the loop and communicating doors.

7th. That the roofs of the buildings should be accessible externally. This might be by iron steps built in the walls after the plan of the sewer manholes or otherwise.

8th. That the building be provided with service-pipes having an outflow into each section of the floor built in the walls parallel with each floor-tank, having each a perpendicular feed-pipe with its orifice in the bottom of the roof-tanks furnished simply with a wooden plug. Two perforations of 4 inches diameter through each main girder would prevent one section of the floor being charged before the other, and a simple arrangement, familiar to all engineers, would prevent the floors being overcharged either with steam or water.

9th. That where a plurality of buildings are to be erected, the same height should be observed, and each roof-tank connected, which, in such a case as Cotton's Wharf, would give a sufficient supply of water for any ordinary emergency, independent of all extraneous aid.

10th. That the roof-tanks be kept constantly charged, and allowed to flow slowly to prevent stagnation.

11th. That a hose be provided for internal use on each floor, connected with roof-tank.

12th. In the event of fire, it would be obviously possible to charge the tank-floors above and below, reserving the entire force of water to swamp the burning goods, an operation that might be performed before the arrival of any extraneous aid.

Such is the plan I propose, and, should it be considered to possess any merits, I leave both it and myself in the hands of the public to deal with both as we may be thought worthy.

JNO. C. PORTER, 65, White Horse Street, Stepney.

WATER-COLOUR EXHIBITION.

5 Pall-Mall East.

THE present collection does not display any extraordinary advance either in execution or choice of subject from that of last year. The only change of importance is the addition of three new members, namely, Messrs. A. W. Hunt, J. W. Whittaker, and H. B. Willis. The last-named artist has been chiefly engaged on pictures in oil, but he now appears as a most accomplished painter in water colours. "A Meadow Scene in Sussex" is remarkably finished, but at the same time the general effect of nature is well preserved. "Evening" from the same pencil, will be admired for the flatness of the distant country, the admirable style in which the animals

are painted, and the great variety of treatment. Several other scenes of a similar kind, being equally well painted, establish this artist as a valuable acquisition to the society. Of a very high order of merit are the four contributions by Mr. J. W. Whittaker. "Llyn Heli" is a fair example of the rest, for it is classically treated, well composed, and chastely coloured; and the five drawings exhibited by Mr. Alfred Hunt, the other new member, are graceful in feeling, with a tendency to minute pencilling, something in the style of Birket Foster, particularly the drawing with a pleasing twilight effect, entitled "Oberwessel." Having disposed of the new contributors, we will turn our attention briefly to the veterans of the society.

Mr. Branwhite is less theatrical this year, and his landscapes gain by the change. "The River Dee, North Wales," retains all his usual clearness of effect without exaggeration. "The Morning Blessing," by Mr. Rivière, is pretty, and would be perfect if the face were not too powerfully portrayed for the rest of the subject. Mr. Taylor continues to paint his dogs and huntsmen in his old broad manner, without having increased the correctness of his forms; but we think the drawing (No. 7) is appropriately called "Repose," as the arrangement is suggestive of that sentiment. Mr. Davidson is, as usual, a numerous contributor. "Looking up the Dollywddelan Valley, North Wales," is clever; "At Reigate—Early Spring" has much careful detail, and at a proper distance presents the true aspect of nature. "Late in the Autumn—Windsor Park" is in the same style, and "On the Flugwy, North Wales," has a waterfall very effectively represented. There are several excellent drawings by Harding, and we think the best of them is the "Pass of Inversnaid, Scotland.—Deer Stalking." Mr. W. C. Smith's view at "Vicenza, Lombardy," which is generally elegant in treatment, would be improved if the harsh and angular outline of the distant mountain were softened; but there is much vigorous pencilling in the "Bed of the Llyn, Llynmouth." Some of the productions by Mr. John Callow, like his study "On the Margate Sands," are elegant, and not so conventional as formerly. "Beating up the Frith of Forth" has besides a freshness of atmosphere very suitable to the subject. Mr. Gilbert pursues his reckless and bravura style of execution in "Rhine Wine," a party of Germans indulging rather plentifully in that beverage, but in "Don Quixote at Home," arguing which was the better Knight, Palmerin of England or Amadis de Gaul, with the barber-surgeon of the town, shows that this artist can moderate his pencil and bestow due consideration upon a subject when it pleases him. It is to be regretted that he does not indulge in that pleasure more frequently.

Carl Haag, although his works are always excellent, does not appear to show so prominently this year as we have seen him on former occasions. "Balbeck," with its fine ruins, and the robbers lurking in the shade waiting to surprise a caravan, is an interesting subject.

Mr. Alfred D. Frupp has greatly improved. "A Dorsetshire Shepherd Boy" is a very beautiful drawing, and remarkably refined in both treatment and colouring. Mr. George Frupp also deserves commendation. There is much excellent painting in the view of "Glencoe, Argylshire." A group of children on a piece of rock, which he calls "Specimens from the Mountains of North Wales," is not well sustained in execution; but "Moulford Ferry—on the Thames, near Streatly," is delightful in tone, elegant, without apparent labour, and in general effect is very true to nature. Mr. Palmer's works are quite as good this year, if not better than they have hitherto been. His glowing sunsets and ideal subjects are very pleasing, and it strikes us that he rises into the regions of poetry in his drawing of "The Fisherman's Wife," hailing the boat as it appears on the sunlit horizon after a storm. There is a very extraordinary composition, which must not be passed over, by Mr. Smallfield. It is "St. Francis preaching among the Birds," from the "Golden Legend." The mild and subdued light pervading the whole scene is suggestive of balmy quietude. The dark dresses of St. Francis and his companion add solemnity to the effect, while a calm devotion is expressed upon their features, and the feathered audience assembled on the branches of a leafless tree, at the foot of which are congregated those formed for the land and water, present an effect truly excellent.

Mr. Birket Foster sends eight of his very highly-finished and exquisite drawings: "A Loek," is luminous and picturesque; "Children with a Bird's Nest," is excellent; "Fishing," besides the charm of the execution, is pleasing from the evident interest the children take in the sport; but for beauty and breadth of tone, combined with the effect of fresh breeze and clear atmosphere, "On the Shore, Bonchurch, Isle of Wight," stands unequalled. David Cox, jun., has made an advance, because, without copying, he paints with more of the feeling of his late father. "Emancipation Oak—Holwood, Kent;" "An Avenue, Surrey;" and "Fairlight Mill, Sussex," may be taken as examples of his improvement in art. Mr. Richardson's "Amalfi" is fine; and "Off the Hills, Strath Braan, Perthshire," and "Bellaggio, Lake of Como," are quite as good. Mr. O. Oakley wisely treats his subjects in a low tone of colour, by which he draws attention on their humour and expression. "Turned Back," a boy who has failed to learn his task; "A Victim Approaching;" "Gipsies looking out for a Customer to have his or her Fortune told," and "Buy my Spring Flowers," have all the ease and movement of nature. "The Mountain of Glory: scene, Ardour, Argylshire," is one of those peculiar effects in which Mr. Alfred Newton delights. A very striking contrast is obtained by opposing the pink tints thrown by the setting sun upon the tops of the mountains to the delicately-ethereal blue of the sky; the whole subject is besides bathed in mild atmosphere and softened light. The large drawing by Mr. H. Gastineau of "Lago di Piano," shows much patient labour; it however wants well-placed and decisive accent to give it the vigour of nature; but

a "View near Cassel Cùrig, North Wales," is better in the latter respect, and has also something classical in its general conception. "View in the Forum at Rome—Morning," is a clever and firmly-executed drawing by Mr. Arthur Glennie. Mr. W. Hunt's minute imitations of fruit, flowers, and birds' nests are as successful as ever. Mr. George Dodgson has a spirited subject entitled "On the Banks of the Thames;" an excellent effect of light in that of "The Thames at Mile End;" and a remarkably clever and playful treatment of moonlight in a study from "Richmond Castle, Yorkshire." The small, but powerfully-executed heads by Mr. Burton, have attracted much notice this year. They are "The Wife of Hassan Aga" and "Yelitza." The same artist exhibits a third drawing of a child playing at cup and ball in a German kitchen, the whole of which is surprisingly clear, but impossibly clean. "A Harvest Home," by Mr. Walter Goodall, is a very meritorious work; the figures are dancing with lightness and spirit, the shadowing is managed with great skill, and the whole is a capital representation of the reality treated throughout with admirable taste. "The Driving to Fold—Sunset," and "Repose," by Mr. F. O. Finch, are both excellent, although the former might be made a little more decided in parts with advantage, but the latter has purity of style, and is, besides, very highly finished; and a "Canal Scene at Malines, Belgium," by J. Burgess, jun., is cleverly and forcibly executed.

THE NEW WATER-COLOUR SOCIETY.

53 Pall-Mall.

THERE is no great novelty to record in the exhibition of drawings in this gallery for the present year. The figure subjects may first claim our attention, and, commencing with the numbers in the catalogue, we come to "Falstaff's Visit to Ford's House;" but the artist, Mr. Wehnert, is so completely over-matched by the difficulty of his subject, that we cannot compliment him on any success in the attempt, but he seems more at home in the "Interior of the Church of St. Michael, near Tenbury, Worcestershire." Mr. Lee's "Asking a Blessing" is clever, but the child in the foreground is rather affected in attitude. "The Welcome Draught," by the same artist, is better. Mr. Carl Werner does not exhibit a single drawing, out of his six or seven, equal to several of his last year. "Garibaldi in Sicily," seated beneath the ruins of a Norman church, receiving offerings of horses and supplies from Sicilian peasants, is, we think, the best of his efforts. "Olivia," from Tennyson's Talking Oak, by Mr. John Absolon, is extremely well drawn, and treated with great taste, and the drawing is equally good in his "Courtship of Gainsborough." "The Parting Gift on a first Desert Journey—a Mother's Sainted Amulet," is one of those elaborate works which Mr. H. Warren generally exhibits at this gallery, consisting of Eastern travellers mounted on their camels, with one of those peculiar atmospheric effects which he manages with so much skill and taste. "The Card Trick," by Mr. L. Haghe, represents the interior of a guard-room, filled with idle soldiers, one of whom holding a pack of cards appears to be showing a comrade how the trick is done, and "The Salle d'Armes at Bruges," in which soldiers are fencing, are both good; but his most important drawing is entitled "Arnold of Brescia defending his opinions in a Consistory at Rome." He distinguished himself by being the founder of a sect which opposed the wealth and power of the Romish clergy. The whole of this drawing is executed with more decision than we often see in designs by Mr. L. Haghe.

Mr. Henry Tidy exhibits several drawings of single figures, treated with refined taste both in the tone of colouring and the style of the drawing. "The Keeper's Daughter, Jessie," "The Light Side of Irish Life," "Xarifa," and "The Last of the Abencerrages, from the French of Chateaubriand," are excellent in those respects. This last mentioned drawing contains several figures, and is the most elaborate work by this rising and talented artist exhibited in the gallery. Mr. Tidy created a sensation two years since by a poetical conception of "Queen Mab," and last year by an equally high conception from the poem of Dar-Thula, both of which are in the water-colour department at the International Exhibition; but the former is not hung according to its merits. "The Charcoal Burners," by Mrs. E. Murray, Teneriffe, is a Spanish subject, boldly executed. "The Bonnie Fish-wife," from the same hand, is a female of extraordinary dimensions, but whose dress is well painted; and the other production by this clever lady is "The Belle of the Market, Seville," which wants more unity in the general effect.

The landscape and sea pieces are about as numerous as usual, and we perceived no falling off in their merits. Mr. Thomas Boys sends some pretty scenes of buildings. We noticed "Silver Street, Salisbury," "Hampton Court from Mousley Lock," "An Old House at Rouen," and several others, executed in his usually pleasing manner. There is a good imitation of fire in "The Conflagration near Westminster," by Mr. W. Wyld. The distance is excellent, and the stone-work in the foreground well touched, in "Tintern, from the Porch of the Chapel on the Hill," by Mr. Chase. Mr. Rowbotham's view of "The birth-place of Masaniello," is an interesting scene, and is very elaborately executed. We, however, prefer the smaller works by this artist, on account of their being more directly derived from nature. Mrs. Harrison deserves praise for the delicate and tasteful style in which she treats her vases of flowers. Mr. Bennett's woodland scenery sustains his reputation, particularly the character he gives to his oaks overhanging the forest glade, and his waves breaking against rocks on the sea-shore, which have wonderful truth, and seem to fill the air with saline particles. We much prefer this masterly style of art, which reflects the impress of the artist's mind, as well as the general character of nature, to the photographic and individual truth recorded

in the drawings by Mr. Edmund Warren. They are no doubt marvels of close copying, displaying great powers of execution, much artistic skill in the choice of subject, truth in the retiring qualities of the atmosphere, as well as decision in the details of the foreground; and he sheds a quantity of light over the whole which gives considerable beauty to the effect; but still these views remind us more of the photograph and the labour of the artist than they affect us by the happy expression of his conceptions. Mr. E. Warren does not send so important a production as the "Wood Side" in the previous exhibition, and now in the English Water-colour Gallery at the International Exhibition. The "Hay-field," in the present collection in Pall-Mall, is the best of his contributions, having a very pleasing tone of colour and being less laboured in detail than some of his other drawings.

Mr. McKewan has sent sixteen specimens of his industry and talents. "Under the Oak," and "The Conqueror's Oak, Windsor," deserve attention; while the flatness of the water and the freedom of execution in the "Way Across the Brook," will also be admired. We think Mr. Fahey, the respected secretary of this institution, has been more successful than usual, particularly in his drawing of "Windsor from Clewer Mews," the distance of which is well lit, and the foreground harmoniously coloured. A pretty piece of mountain scenery, by the same artist, will be found in the view of "Miteside, Cumberland." Of coast scenery, Mr. J. Philp is an excellent representative. There is good composition in his "Oyster Packing," with a luminous effect in the sky, and busy groups on the sands, the whole being well subordinated to unity of design. Mr. Hayes has an excellent sea-view, entitled "A Dutch Brig Hove-to for a Pilot," which possesses merit from the manner in which the figures on the jetty are made to blend with the sky and to form a component part of the subject, instead of being rendered so distinct as to separate them from it—a mode of treatment we often see adopted, to the serious detriment of otherwise good pictures. In conclusion, we would direct attention to a very fine drawing by Mr. Charles Vaucher of "Taormina, Sicily." The distance is remarkably aerial, and the long line of ruins, forming the principal feature in the middle distance, is very picturesque in its irregularity, harmonious and varied in colour, and comes luminously off from the mist-producing plain below.

In the "Old" Society, as it is termed by way of distinction, there are 329 drawings, and in the New Society just concluded there are 333; it is therefore manifest that in these brief notices many meritorious works are unavoidably omitted; we must therefore recommend our readers to visit both the Societies and judge for themselves.

ST. JAMES'S NEW VESTRY HALL, PICCADILLY.

THIS building, now approaching completion, and of which we give a view on another page, has been erected by the Vestry of St. James's, Westminster, for the purpose of providing a more suitable and convenient place than they have hitherto possessed in which to hold their public meetings; but chiefly for the concentration and more economical performance of that portion of the parish business which comes immediately under their control, and which, at much inconvenience and expense, has been hitherto conducted in several offices.

The committee under whose superintendence the building has been erected, having obtained designs, instructed their surveyor to prepare plans, and accepted the tender of Messrs. Mansfield. The work was commenced in the early part of the summer of 1861, by the removal of an existing building, one of the best structures, both as to materials and workmanship, that it has been the architect's good fortune to see.

The difficulties that arose in the arrangement of the building consisted mainly in the confined space that was available for the purpose; the architect having strict instructions to encroach as little as possible upon the churchyard, and that any encroachment really necessary should be on the ground-floor only, leaving the soil below as far as practicable intact. To accomplish this, there has been no excavation under the rear rooms, the external wall towards the Churchyard being carried on wrought-iron girders, with a massive relieving arch over them, finished with tile arches in cement on smaller girders below.

The style adopted for the elevation is Italian, to correspond with, though not to imitate, the exterior of the church, the architect having attempted to produce something that should be simple, bold, and durable; care being taken that the character of a public building should be definitely given.

The materials adopted are red bricks and Portland stone. Instead of the bricks showing the arrises round the reveals of the windows, a molding has been substituted. It may be mentioned that the architect's original proposition was to execute the whole nearly as at present in red bricks, including moldings and enrichments.

The extremely confined space, and there being very little available basement, required a great deal of study to provide in the plans all that was necessary, and at the same time to avoid the appearance of being cramped, always fatal to architectural effect. This has perhaps, on the whole, been satisfactorily accomplished, though it has involved an amount of work in the plans and sections not usually given in so small a structure, and which would hardly have been attempted by many.

Entering at the principal doorway in Piccadilly, in which some originality of detail has been attempted, a lobby with spring doors is provided, paved with plain tiles arranged in patterns, and divided into four bays by plain pilasters; it has a semicircular ceiling and Welsh groins over the openings, two of these arches give access to the staircase, and columns are substituted for the pilasters. These columns have rouge royal marble

shafts in one piece, with Ionic caps and bases, executed in statuary marble, the cost of this being found not greatly to exceed that of scagliola, with cast-iron cores.

On the right is a room appropriated as a Savings Bank, and on the left the office for conducting the business of the Vestry, with the Vestry Clerk's private office leading from it. Opposite the principal entrance is the Rate Collector's Office. The hall and staircase has a second entrance from the churchyard. Underneath the landings and staircase, space for the necessary adjuncts is contrived by means of some descending steps.

Descending into the basement, formed of two long barrel vaults, previously existing and disturbed as little as possible, one only of which was available, we enter the Muniment Room, about 18 ft. x 11 ft., having one of Chubb's fire proof doors, and a gate within, to allow of the door being opened to admit air; to check damp and provide ventilation, an air chamber is formed all round with air bricks; there is also an air flue provided in the crown of the arch forming the ceiling; the fittings of this room consist of slate shelves on half brick piers, the floor is paved with plain square tiles set diagonally.

A large coal-cellar occupies another portion of the basement; and the space under the staircase is available for a variety of purposes, such as gas experiments. A sink and water supply is also provided. The basement generally was constructed in the early part of the present century, and has been left as nearly intact as circumstances would permit. The first floor contains the vestry hall and a committee-room, the vestry hall being about 38 ft. x 28 ft., and 18 ft. high, with a small gallery over the entrance from the staircase. The fireplaces are to be contrived under the centre window at each end, an arrangement that is in many ways satisfactory. This room and the committee-room have double sashes to all the windows, the inner ones being of wainscot, the doors and other woodwork in these rooms, together with the whole of the fittings, being of the same material. The committee-room communicates with the vestry hall and landing; it will also serve for a waiting-room for deputations, &c. Leading from the landing and vestry hall is a small retiring-room. This room has been obtained by throwing a wrought-iron girder across an angle and building on it. It contains a water-closet, urinal, and lavatory, and is finished below by small tile arches between iron girders, and above with a flat. Ascending the stairs, we reach the "Ratepayers' Gallery," a small gallery for the parishioners. On a level with this is a small room obtained by keeping the floor of the committee-room and staircase landing a foot below the vestry hall, which, giving 19 ft. clear, allows a committee-room 10 ft. 6 in. high, and an intermediate-room 7 ft. 6 in. high. This room is especially useful, as it is available from the first or second floor, and may be used with either. The windows of the vestry hall have plain architraves raised upon a dado, all in Keen's cement. The ceiling is to a certain extent "trabeated," following the constructional arrangement with a deep cove and small groins formed round the semicircular windows. The enrichments in the ceiling are mostly perforated, and are connected with ventilating flues. A supply of fresh air is to be obtained by opening a number of valves. The committee-room is provided with corresponding arrangements. The fireplaces in these rooms are of marble, inlaid with Minton's tiles, in panels of a severe pattern. The ceiling of the vestry hall, forming the floor of the rooms above, is carried principally by two stout queen post trusses, with wrought-iron tie-rods, preferable, in the opinion of the architect, to iron girders. All the piers between the windows are carried up in Portland cement, more for the purpose of guarding against unequal settlements than for any additional strength supposed to be acquired thereby. A double or "Victoria" flooring has been adopted in the vestry hall.

The second floor provides accommodation for an office-keeper, consisting of a sitting-room, fitted with range, sink, &c. &c.; two bed-rooms, water-closet, and closet for coats, &c., all entered from one door, and disconnected from the rest of the rooms on this floor, which comprise one large and three smaller rooms, available for any purpose that may be required.

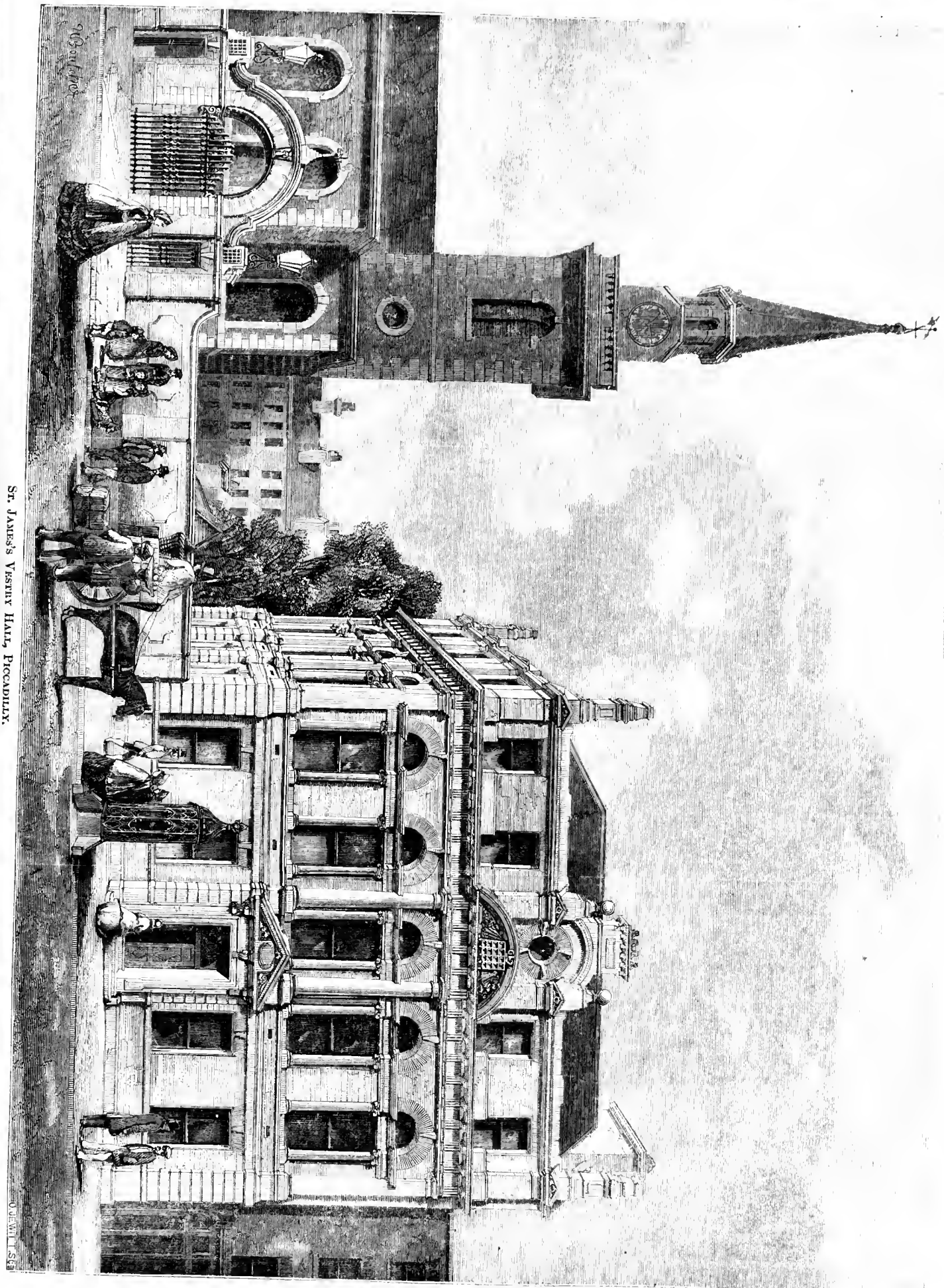
The staircase has Portland stone spandril steps, and 5-in. Portland landings. Both the landings and steps are carried at the ends on wrought-iron girders, bracketed and plastered, with ornamental trusses or corbels against the walls. The windows will be glazed with coloured and ornamental glass. An enriched iron handrail, and mahogany capping, is continued as far as the Ratepayers' Gallery.

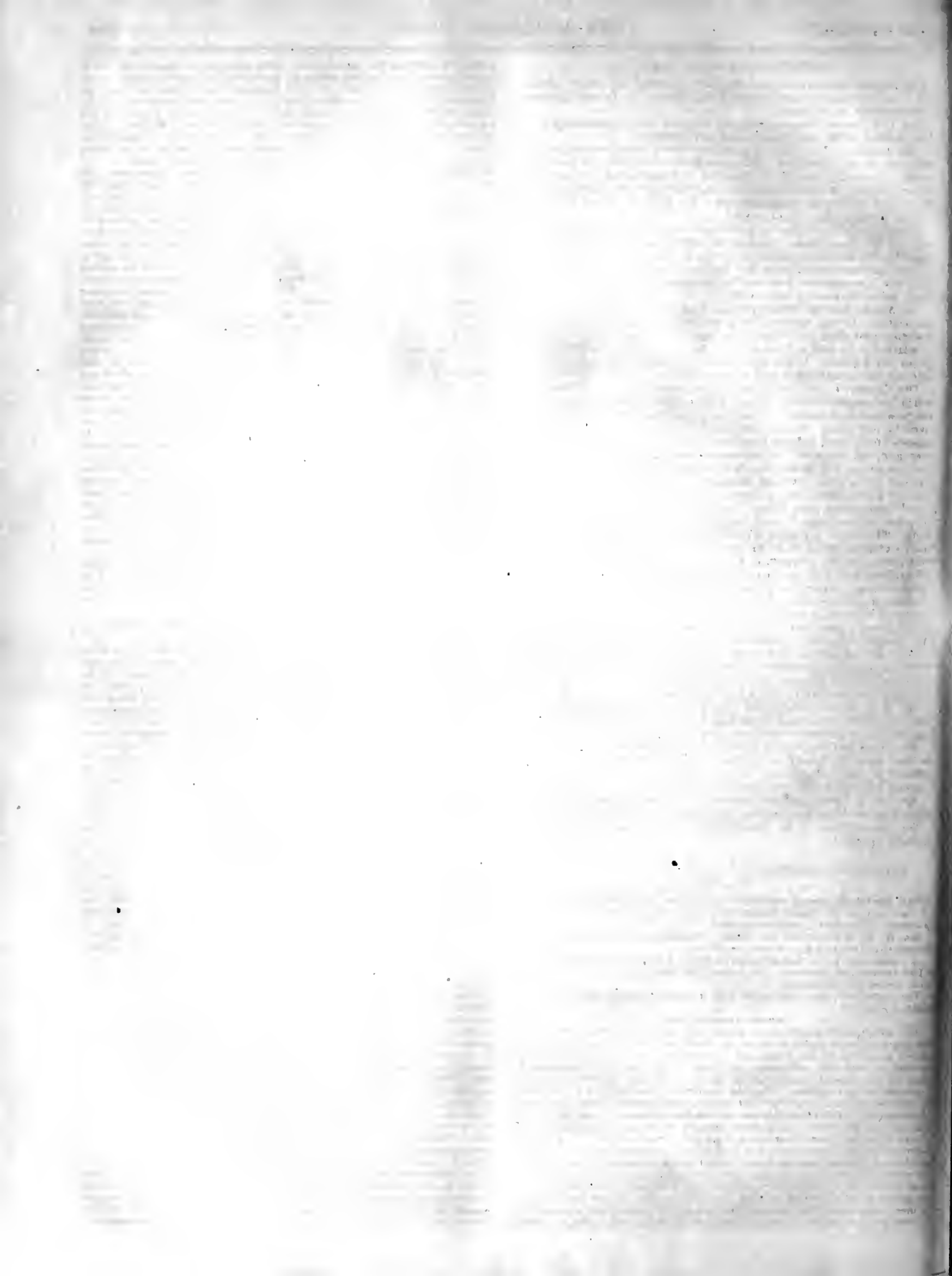
The main cistern is in the roof, supplying smaller ones near where they are required, the latter being also provided with independent services. The various water-closets, urinals, and lavatories are by Mr. Jennings, as are also the drain-pipes, and include his later improvements. The whole of the works have been most satisfactorily executed by Messrs. Mansfield, the amount of their contract being in round numbers £6,000.

The portion of the boundary wall to the churchyard, seen in the engraving, is part of an extensive series of works carried out under the superintendence of the rector and churchwardens, consisting of the boundary wall and gateway, an alms-house for distribution of alms daily, also various necessary adjuncts to the church, as coal, coke, and dust sheds, waterclosets, &c. In addition to these new works, the parish engine-house has been rendered more available for its purpose, the various walls pointed and repaired, the railings repaired and painted, and the "Green Churchyard," towards Jernyn Street is proposed to be completely renovated and rendered an ornament to the parish, instead of being a mere depository for rubbish as heretofore.

Mr. A. P. Howell, Surveyor to the Vestry, has designed and executed the building, ably and honestly seconded by Mr. George Ellverley as Clerk of the Works.

St. James's Vestry Hall, Piccadilly.





ARCHITECTURAL ASSOCIATION.

AN ordinary general meeting of this body was held on Friday evening, at the Rooms, 9 Conduit-street, Regent-street; Mr. THOMAS BLASHILL, Vice-President, in the chair.

Mr. C. J. ADAMS, hon. sec., read the minutes of the proceedings at the last meeting, which were found correct and confirmed.

New Members.—The following gentlemen, after a ballot, were duly elected Members of the Association.—Mr. John Eastby Goodchild, 22 Remington-street, City-road; Mr. H. J. Shepherd, 5 Prince-street, Chelsea; Mr. George Patrick, 18 Gloucester-villas, Loughborough-road, Brixton; Mr. T. Barker, 29 Offord-road, Barnsbury-park; Mr. John R. Gover, 7 Sydney-terrace, Portland-place, Clapham-road.

Nomination.—The following gentlemen were nominated for membership:—Mr. Henry Louis Florence, 30 Brixton-place, Brixton-road (proposed by Mr. Brooks, and seconded by Mr. H. Black).

The CHAIRMAN stated that Mr. Arthur Allom was prevented by unavoidable circumstances from reading the paper which he had intended to bring before the meeting that evening.

Mr. ADAMS, hon. sec., read a circular from the Northern Architectural Association, having reference to a proposed Architectural Alliance of Societies throughout the United Kingdom, the first meeting in promotion of which is to be held in London on the 1st of July. (The circular appeared in our last number.) It was agreed that the subject of the circular should be taken into consideration at a future meeting.

The CHAIRMAN, as one of the judges appointed to award the prizes which had recently been distributed, and as no report from the judges had yet been sent in, remarked that several of the designs for a town mansion were by very young students, and quite equal to what might have been expected from them, judging from their youth. The designs for tiles were very good, and indeed the judges were surprised at their general excellence. One competitor, Mr. Mosley, sent in a design in two colours, and though it did not get a prize, yet some discussion took place amongst the judges whether a prize should not be awarded to it, only two colours being used, and it being a very good design. In designs for tiles it was desirable that very few colours should be used, owing to the expense of manufacturing them. The design in tiles by Mr. Winbridge was an exceedingly good one, and its adoption would be found very useful. As regarded the prize for wall decoration the competition was very slight, there being but three competitors, and that was not to be surprised at owing to a want of information and experience on the subject. He had brought with him two or three engraved copies of a drawing which he made a few years ago of a sepulchral slab, which he found in Maunsell Gunnage, Herefordshire, and in which was a great deal of foliage executed in a most excellent manner. He thought that many gentlemen who made designs in which foliage entered, did not sufficiently study the subject to make their designs effective. The Chairman then proceeded to make drawings on the black-board, explanatory of the root, the stem, the leaves, the flowers, and the branches of various plants, and explained how most plants had a beginning and a growth.

Mr. R. O. HARRIS thought that a too strict adherence to botanical treatment in architectural design would lead them to forget the very best of the conventional treatment of the *Cinque cento* period.

Mr. STIERS moved a vote of thanks to Mr. Blashill for the observations he had made on botany as applicable to architecture, and in so doing referred to some beautiful specimens of metal-work at the Great International Exhibition in which conventional foliage was introduced.

Mr. C. H. F. LEWES seconded the motion, and said he thought that foliage, when introduced into architecture, ought always to be conventionalised.

The vote of thanks to Mr. Blashill was carried by acclamation, and the meeting separated.

LIVERPOOL ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY.

THE fourteenth annual meeting of this society took place on Wednesday sennight, at the Royal Institution, Colquitt Street. Mr. J. M. HAY, the president of the society, occupied the chair.

Mr. W. H. WEIGHTMAN was elected president for the ensuing year, and Messrs. GOODALL and KILPIN vice-presidents.

A motion was carried that delegates be sent to London to attend a meeting of "The Architectural Alliance." Mr. Stubbs, Mr. Weightman, and Mr. J. M. Hay were elected the delegates.

The PRESIDENT, after alluding to local matters, including the death of his brother, spoke of

STREET ARCHITECTURE.

The architectural aspect of our streets, said he, is improving. Our public buildings and palatial piles of offices are gradually becoming the true and consistent exponents of the wealth and commercial greatness of the town; and no one can view with indifference the desire of our municipal government to open up new lines of communication, and to widen and improve the present overcrowded thoroughfares. That the execution of such projects will be costly is true, but not more true than that their accomplishment will be vastly more expensive if delayed till it becomes an absolute necessity. I am glad to find that greater attention is being every day paid by architects, both Gothic and classic, to the sculptural departments of design. This is progress; for sculpture, whatever it is on its own account, is certainly an important auxiliary branch of architecture, and her mission is not fulfilled unless developed to the utmost in the embellishment of architecture. Sculpture, as well as painting, were created, or at least chiefly exist, for the adornment of architecture, which may justly be considered as the mother or elder art; and without the calls she has from time to time made upon them, the great master-pieces of painting and sculpture, the frescoes and arabesques of Angelo, Raphael, Da Vinci, and Correggio, would

probably never have had an existence. Both sculpture and painting have ever, indeed, yielded their grandest effects in combination with architecture. In the greatest styles the world ever saw—the Egyptian, the Assyrian, the Greek, the Byzantine, the Gothic, and Italian of the *Cinque cento* period—the union of the three arts was at its highest pitch; and the greatest works of painting and sculpture were produced as architectural embellishments. Michael Angelo, Raphael, and Correggio, were wall and ceiling painters to their contemporaries. Painting, sculpture, and architecture are indeed three branches of our art which, divided, are comparatively weak and meaningless, but united appear in their full strength, and yield their sublimest tones, "their grand consummate harmony." It is evident that the architects of the great styles I have referred to thus considered them, and made them foster and adorn each other, and this they may ever do. While architecture inspires the sculptor, sculpture may be regarded as the interpreter of architecture, to which it imparts more vivid and distinct expression. There was a time when the chief architects knew more about sculpture than architecture, and were greater sculptors than they were architects. I refer to the great period ushered in by the revival of art in Italy before alluded to. These great artists I know have been cried out against as having too much subjected architecture to the requirements of sculpture; and, indeed, it is true that they introduced, and gave currency to many flagrant abuses, both in composition and detail, but it is also true that they greatly advanced architectural design by their masterly application of sculpture and painting to its enrichment, and by the thorough indissoluble combination of the three arts in many a successful and glorious conception. In their hands architecture regained much of what she had lost in the hands of the ancient Romans—if not all the purity and delicacy and finish of the Greeks, at least nearly all of the completeness, and much of the refinement of form, which had given place, in the hands of the Roman conquerors of the world, to luxuriance and richness, as more in harmony with the sentiments and character of that magnificent people. The greatest event of the present year is the International Exhibition, which was inaugurated last week with all the pomp and splendour that rank, intellect, and wealth could confer. That marvellous collection of the art and industrial products of every nation and of every clime is now open to the world. It forms, as it were, a mighty volume, on whose pages are inscribed instruction for every class and condition of men, from the philosopher and artist down to the humblest mechanic. Even the mere holiday seeker, who listlessly walks through its galleries with the eyes of his mind half closed, will carry home with him some vague impression of the night and majesty of intellectual power. But to the earnest thoughtful soul, the results of such an Exhibition will be incalculable. It is a grand competitive contest on a universal scale, where the laudable ambition of nations and individuals conspires to the welfare and happiness of the whole human family. It is the development of the grand principles of free trade into the higher phase of the free interchange of thought, tending towards the perfection of every product of art and ingenuity. I am glad to know that our own art is so well represented in this Exhibition, and that the models and designs sustain in so high a degree the architectural reputation of our countrymen.

After allusion to the late Prince Albert, the PRESIDENT gave some good

SUGGESTIONS TO STUDENTS.

Let me, said the President, again impress on the mind of the student at the breaking up of the session the necessity of regarding the instruction he gains here as only one subordinate and elementary means of raising himself into the dignity of an architect. No teaching is complete, or indeed of any avail, until the pupil becomes his own teacher, and receives instruction actively rather than passively. Every true architect, strange as it may sound in your ears, though he may have passed a dozen apprenticeships, and been educated by royal or imperial chartered academies, is in reality self-taught, because he cannot become an architect but by *thought*, which no external appliance is in itself sufficient to create. It is your own thought that must render all instruction vital, convert all material into intellectual chyle or blood for the nourishment of the mind and imagination. Without thought it is all a dead letter and of no value. It is thought on the part of the architect that lies at the root of the greatness of Greek and mediævalist. Were Government to endow this society with a rich income, and appoint the most eminent professors to lecture weekly to you from this chair, the secret of its strength must still be in the activity of your own minds. Art will not come at the call of a legislature, nor repeat in England her history in Greece. Earnest thought and diligent practice are what is necessary to bring out the hidden might of architecture and of its professors. It is this that will drive you to make proper use of every means and appliance rightly to employ the elements and principles of Greek, Roman, and mediæval remains. It will lead you to look to the remains of the past in a spirit of metaphysical induction rather than of that literal and physical imitation which has strewed the land with mere copies of ancient examples. You have every motive for exertion. Every consideration to inspire emulation and ambition may be drawn from your situation and prospects. Architecture is sometimes called the grandest of the arts, and when it has duly drawn upon the resources still possessed in the kindred arts of design she is clearly entitled to the epithet. Certainly there are no detached works of the painter or sculptor can call up such emotions of the sublime as many architectural works which could be named,—the temple of Karnac; the Parthenon and Erechtheum; the mosque of St. Sophia; the cathedrals of Germany, Spain, France, England, Italy; the Alhambra; the Indian tombs and palaces; St. Peter's; St. Paul's. But the Gothic cathedrals alone are sufficient to cite as evidence of the power of architecture to produce the sublime beyond any other art of man. The towering pillars and arcades forming and supporting the long drawn aisle and fretted vault, symbolising at once eternity and immensity; the ever recurring, ever varying vista and expanse; light imposed upon and heightening and brightening light; shade deepening shade; richness increasing richness, fill the mind with an awe and amazement that few of the works of the Creator could increase. Let us not suppose that architecture is effete, that she died in giving birth to these prodigies, that it cannot grow with the age, and yield obedience to the requirements that new circumstances create. There are no requirements possible in the whole range of public or domestic life which architecture cannot adapt itself to, or rather, form itself upon. There are principles in architecture of eternal obligation, which cannot be laid aside without loss of significance and beauty. But he who thoroughly understands the principles of architecture, and has any adequate measure of inventive power, will be able ever to apply them to new embodiments that new wants and occasions call into existence, making submission to

their dictates a further opportunity of ringing the changes upon the beautiful and true.—Gentlemen, professional men, associates, and students, in addressing you for the last time from this chair, I cannot but refer to the great pleasure I have experienced in attending your meetings here from time to time. The benefits I have received are great—those I have conferred are small. I have, however, the gratification of handing over to my successor the interests and condition of this society not less valuable nor less useful than they were when I was entrusted with them, but with the full conviction that he will more worthily represent the interests of the society than I myself have done.

The proceedings terminated by votes of thanks to the various officers and the council.

THE NEW CAVALRY BARRACKS AT COLCHESTER.

THE erection of these barracks, for which a considerable amount was appropriated by Parliamentary grant early in the present Session, has now been fairly commenced by Messrs. Lucas, Brothers, the contractors for the works. The erections will be solid and permanent. The walls will be built of red brick externally, and of the uniform thickness of 18 inches.

The principal block of buildings will be that used by the officers, which is in the form of a quadrangle 151 feet in length, having wings 71 feet in depth, with ground, first, and second floors. In the centre of this quadrangle the officers' mess-room will be built. This room will be 50 feet in length by 24 feet in width, having a capacious ante-room, with kitchen and mess men's quarters, and eight rooms in the rear, with extensive cellars. The entire ground floor of the other portions of the quadrangle will be devoted to the servants of the officers; whilst on the first floor, right and left of the mess, will be the quarters of the commanding and field officers, and the sitting-rooms and bed-rooms of the officers. The second floor will be devoted to the same purpose, except that the quarters of the commanding officer will comprise all the rooms on both floors; whilst over the field officers' rooms will be those appropriated to the use of the surgeon. One novel feature in these barracks will be the introduction of corridors or verandahs, one of which will be constructed completely round this quadrangle, about 8 feet in width and 10 feet in height in front; the roof, which is to be formed of corrugated iron, will be supported by elegant iron columns, and the flooring will be covered with York paving, thus forming a lengthened promenade in all weathers.

Immediately behind the officers' quarters will be the barracks, consisting of four blocks for 72 men each, independent of non-commissioned officers. Each of these blocks will be two stories high, the principal room being the barrack-room, 53 feet by 20, with sergeants' quarters, and lavatories and latrines at each end. Around these buildings also there will be formed a corridor, 7 feet 6 inches in width, paved with York flag, and glazed in those portions of the roof which immediately adjoin the windows.

On the western side of the ground will be constructed the stables, which will include all the modern arrangements and fittings. They stand in precisely the same order as the quarters for the men, the officers' stables being first, and the troop stables adjoining. The stables for officers form two blocks, the entire length of the building, including the store-rooms, being 160 feet by 35 feet in width.

The troop stables will correspond in their number with the quarters for the men, there being four blocks of them. These will each be 179 feet in length, exclusive of troop stores, and 37 feet in width; the troop stores will be 9 feet by 19 feet, and no less than six entrances to the stables will be provided. To each of these blocks will be attached four litter sheds, each 6 feet by 37 feet, precisely corresponding with those attached to the officers' stables.

Between the soldiers' barracks and the troop stables will be the cook-house for the men, 25 feet square and 12 feet high, brick and slated, and crowned with a large Louvre ventilator.

The quarters for the staff-sergeants consist of a building of two stories, 121 feet in length by 37 feet 6 inches in width, so as to provide the requisite accommodation of a sitting-room and bed-room for each man, the want of which has been so much felt in the Infantry Barracks. These rooms will be 17 feet by 14 feet 6 inches, and of proportionate height—a size equal to the principal rooms in many of our middle-class houses.

There is also to be a regimental reading-room, and, for the children, a commodious schoolroom, with residence for the mistress.

Near to the artesian well will be erected the barrack stores, 129 feet by 27 feet 6 inches, having its back to the Laver Road, to which it will form a sort of boundary wall.

There will also be constructed the customary baths and latrines; and farther down the Laver Road, the quarter-master's stores, 155 feet by 22 feet 6 inches, and the shoeing shed, 50 feet by 16 feet.

Some notion may be formed of the extent of these barracks from the fact that upwards of 7,000,000 bricks will be used in their construction.

The entire superintendence of the work is entrusted to Mr. Mitchell, the contractors' manager.

THE HEREFORD CATHEDRAL SCREEN IN THE GREAT EXHIBITION.

LAST year, says the *Daily News*, as the crowning work of the restoration of Lichfield cathedral, a new choir-screen was executed by Mr. Skidmore, in metal-work, after designs by Mr. Scott. This screen, then the most important example of modern architectural metal-work, proved a triumphant success. It had no rival, indeed, because it was alone amongst the choir-screens of our cathedrals, as a work exclusively of iron, and brass, and copper; but then it also stood above rivalry on the high ground of its own artistic and architectural merits. Thus, in the Lichfield screen an absolutely successful experiment was achieved; and it was conclusive as a demonstration both of the admirable qualities of metal architecture and of the ability of living English architects and artists to work in the metals. The Lichfield screen, however, has not long been left to vindicate, unsupported, the eminent architectural capacities of iron and its metal allies. Mr. Scott has for some time been intrusted with the restoration of Hereford cathedral, and in January last his suggestion was approved by the Hereford dean and chapter, that the required choir-screen should be executed in metal-work for their cathedral; and, with the Lichfield screen fresh in his remembrance, Mr. Scott again placed his drawings in the hands of the distinguished architectural metal-worker of Coventry.

Mr. Skidmore at once entered upon this new work with the most determined energy; and, notwithstanding the short space of time that was before him, he undertook to place the Hereford screen in the Great Exhibition, as an example of the English metal architecture of 1862. In the Great Exhibition, a little to the south of the eastern dome, this noble work now stands—not quite complete in certain matters of minor detail, and necessarily deprived of all the felicitous associations that will gather thickly around it in its ultimate resting-place beneath the choir-arch of Hereford.

It must be borne in mind that this screen has been designed to take its place in one of our cathedrals in our own times, and with a view to the requirements not of the era of the Plantagenets, but of that of Queen Victoria. It has been purposely constructed, therefore, of open-work, which may distinguish between two parts of a cathedral without at all shutting off one of them from the other. When in its proper place the two extremities of this screen will abut upon the walls of the choir, and thus the entire work will assume that appearance of consolidated strength for which it must depend upon the masonry of its cathedral. The composition, while equally true to the Gothic style and equally consistent with the character of a cathedral screen, in its treatment differs altogether from that of the kindred work at Lichfield. It is an arcade of five arches; but each arch is divided into two sub-arches, so that there are five pairs of secondary arches, as well as a like number of primary arches. The central arch, which forms the gateway, is of bolder proportions than the rest, and it is surmounted by a lofty pedimental canopy, acutely angled, and having its slopes formed of straight lines. The principal structural members are for the most part all of iron. The shafts of the first order are partly of brass and partly of iron; and the smaller shafts are entirely of brass. The sweeps of the arch-heads are also of brass, splendidly enriched with vitreous mosaic in bold and most effective masses. The canopy of the central arch is surmounted by a simple cross of large size and rich adornment, and the crochets are bunches of flowers and leaves in iron-work of singular beauty. Within this canopy is an ample panel of the pointed vesica form, surmounted by a circle. The cusplings and traceries and the lower panels of all the arches are of the most elaborate and delicate iron-work, wrought with such marvellous refinement of treatment that the whole may be styled a mass of iron filigree. Equally delicate and skilful is the treatment of the capitals and corbels, which, with the cornice and many of the decorative details, are executed in copper, beaten with the point of the hammer after the early manner from the sheet of the metal. In part closely studied from natural forms and in part happily adapted to the purest Gothic conventionalisms of foliage, these copper capitals show how completely Mr. Skidmore is master of the material in which he delights to work. They may be studied, with equally gratifying results, both as examples of metal-work of the highest order and as noble pieces of architectural detail. The four main arches of the screen, two of which are on either side of the central canopied arch, like the central arch itself, have their spandrels most richly traceried. These arches are surmounted by a frieze and cornice, the whole being crowned by a parapet covered with scale-like brazen tiles. At present the ridge is quite plain, but ultimately it will probably receive a low but richly-wrought cresting, with pinnacles to mark the points of division between the arches.

At Lichfield, on either side of the central arch, are four figures of angels, one of them standing in front of the spandrel between each pair of the arches of the arcade; and these angel figures represent a celestial choir, all of them being engaged either in playing on instruments of music or in the act of vocal praise.

In the Hereford screen a group of two angelic figures, winged with wings of a most unearthly fashion, stands as in adoration, boldly corbelled out from above the capitals of the clustered jamb-shafts of the central arch; and, at either extremity of the composition, placed precisely in a similar position, a single figure of a winged angel appears to be playing upon a musical instrument. In the centre of the whole, supported by a corbel that rises gracefully from the capital of the slender central shaft, there stands a figure of the Saviour as in the act of resurrection. Beneath His feet, entwined amidst the foliage of the capital and the corbel, are bunches of passion-flowers, tenderly wrought in copper.

Like the Lichfield angels, all these figures are executed in copper, which will retain the rich natural colour of the metal. In like manner, all the details that have been produced in the same metal retain the true colour of the copper itself. The brass-work is everywhere unvarnished; and where it comes into contact with the sparkling masses of mosaic, its surfaces are studded with jewels. The iron is all painted or gilt, the gilding having been most judiciously applied with a sparing hand. The colours, with the sole exception of the greens, are all oxides of iron, and thus they may be assumed to be the natural colours which iron itself should receive from the artist. The whole of the colouring has been most carefully studied, and when it is seen in the subdued light of the cathedral it will unquestionably produce an eminently beautiful effect.

With the screen there will be associated in Hereford Cathedral a large and splendid gas corona, and also two standards, all of them of the same iron filigree work with the screen itself. In the Great Exhibition the corona hangs a little to the northward of the screen, and one of the standards is grouped with three others, that are severally destined to give such light as may be given by gas-jets in the cathedrals of Lichfield, Norwich, and Calcutta. The ready facility with which Mr. Skidmore adapts the iron to whatever uses it may be required to serve, and his unswerving fidelity to true architectural art, are vividly shown in these productions. While most happily suited for gas lighting, both standards and corona are true in every detail to Gothic feeling. The corona is indeed a worthy companion to the screen. Conical in its general form, it is composed of three tiers of arches which diverge about a central shaft. The arches are elaborately traceried, and the coronet-like circle from which the lower arches spring, similarly enriched, is studded with clusters of gas jets, and richly adorned with large pieces of transparent crystal-like substance that will not fail to enhance the effectiveness of the gas illumination. In addition to the circle of jets, seven standards, rising at right angles to them from as many radiating pipes, surround the whole, and are crowned each with its own cluster of jets.

TOTAL ABSTAINERS' PARK, GLASGOW.—The Abstainers' Union in this city have leased and opened a park opposite Kelvin Grove, containing nearly forty acres, portions of which they have dressed up in a neat manner. A gymnasium and quoit-ground have also been provided, besides accommodations for all sorts of games.

POTTERY IN THE INTERNATIONAL EXHIBITION.

AFTER a rapid survey of what has been as yet unveiled by exhibitors of pottery and porcelain, both British and foreign, in the International Exhibition, we must confess to feeling, on the whole, a justifiable pride in the productions of our pottery towns. Just step into what is decidedly the best-arranged china establishment in the Exhibition, that belonging to Messrs. Minton and Co., of Stoke-upon-Trent. Glance at those divine little vases of Celadon china, with their delicate white cords and lovely fern-leaves. There is one of those vases which is not quite so charming as the others. Its beauty has been marred by a quantity of tasteless gilding. In the manufacture of majolica vases this firm is clearly unapproached and unapproachable. Many of their articles are, indeed, magnificent triumphs of the potter's art, but some few of the designs are singularly repulsive. There is a huge vase adorned with villainous-looking satyrs' heads. The spectator turns with disgust from those vicious, pallid faces, those horrid pale-pink lips, and ugly protruded pale-pink tongues. There is a grand pair of porcelain vases with large, boldly-painted wreaths of roses and handsome snake handles, to which the hue of dead gold has been imparted. These are rather heavy and stylish articles, and are much admired, but their design is very faulty. It is not well to let our eyes travel beyond the lower limits of the vase. That large and beautiful article with those lordly rams' heads looking forth from its sides, is poised upon the shoulders of some three or four pretty little children, whose faces cannot be seen, for they are bent earthwards. All this is positively painful. When you see Atlas carrying the world on his shoulders, you glance at the lusty fellow's splendid muscular development, and have no fears that the huge ball will break his spine and crush every square inch of his body. But here the idea is very different. The little vase-bearers are mere babies, and should be flying about in a carriage drawn by doves instead of groaning under a huge burden of porcelain.

Etruria is well represented in the Exhibition by the grandson of the celebrated Wedgwood. The manufacture of those beautiful vases of light-blue jasper has only recently been revived. They were out of fashion, it seems, for some twenty years or so. There is a huge specimen with lovely white bas-reliefs, representing a sacrificer, and some fine heads of goats and wild boars, with magnificent borders of oak and laurel-leaves. It is the largest thing of the kind ever made, being three feet high and two feet across at the top.

Alderman Copeland's collection of Parian figures is surpassed by that of no other exhibitor. We particularly direct attention to the statuette of Beatrice.

"With regal step, and look wherein disdain
As pictured, still proceeding, thus she said
(Like one who doth her bitterest fault retain):
'Yes, I am Beatrice—regard me well!'"

In the alderman's glass cases are to be seen some exquisite specimens of landscape-painting on porcelain.

The French courts, especially that devoted to the exhibition of articles from the imperial manufactory at Sèvres, is particularly rich in that beautiful description of porcelain called Celadon, to which we have already called attention. Celadon, on account of its exceedingly brittle nature, is very difficult to manufacture, and in France, indeed, is made only at Sèvres. The specimens here exhibited consist of several large vases, very graceful in form, like most objects of art turned out by our highly artistic friends across the Channel. The following is the process employed. First, the vase is modelled, and the figures put on with a brush. Then the vase is put into a glaze, after which it is gradually and tenderly introduced into an oven. Just look at those raised white figures on that fine stone-coloured ground. Place a light within the vase, when the shades of evening have fallen, and vase and figures will suddenly assume the loveliest of rose-coloured tints. In M. Hadrot's fine collection of porcelain we were particularly struck with some beautiful articles in Celadon which had been made for the Emperor and Empress of the French. These consist of an oval vase and two lamps. On one of the latter is finely painted the head of Napoleon III.; on the other is an exquisite likeness of the Empress Eugénie. The price of the Imperial lamps is about £6 each.

In the porcelain exhibited by M. Jullien there is an exquisitely beautiful tea service in what is styled metallic gold, and an equally beautiful coffee service in metallic emerald. We confidently predict that during the months of May, June, July, August, and September, sighs enough to turn a mill will daily be breathed from rosy lips over those delicious bits of china. We earnestly recommend the exhibitor of those treasures to look better after them than he has hitherto done, or some day he will, on returning to his stall, find himself the victim of some fair porcelain kleptomaniac. Amongst the Sèvres porcelain we noted a pretty vase, of the celebrated colour styled *Rose du Barri*. This colour is painted on. Limoges exhibits some fine pieces of china. A magnificent central piece of biscuit paste, with enamel, is one of its most noteworthy contributions. M. Pouat, from that quarter, exhibits a collection of plates, cups, saucers, teapots, &c., in a beautiful white porcelain, which is totally without flaw, and almost transparent.

Some of the best imitations of the strangest sort of Palissy ware are to be found under the French flag. Most readers know how fond that enthusiastic designer, Bernard Palissy, was of constructing plates and dishes representing the bottom of the sea, covered with shells, pebbles, and seaweeds, fishes and snakes, and how he gave to those plates and dishes with their contents the name of rustic pieces; and also how speedily this strange species of ware became the fashion in France and England. We strongly

recommend a visit to those imitations of Palissy. Perhaps the strangest article of the lot is a large oval looking-glass with a frame which would have delighted the great Bernard himself, covered as it is with lizards, fishes, tortoises, marine plants, frogs, beetles, sea shells, and surmounted by a naked little urchin who lustily blows his conch. Underneath the fish and reptile mirror are a great number of plates and dishes which swarm with creatures of the kinds we have already specified, and jugs in the shape of sea monsters with mouths horribly agape. On the lowest range are three dishes far superior in workmanship to the other articles exhibited. In one of these dishes the principal figure is a pike, the skin of which is excellently rendered. Grouped round this ravenous creature are lizards, shell fish, leaves, &c. In another dish a handsome snake seems engaged in mesmerising an unhappy frog, of a bright green colour. In the third and last of our dishes of predilection a well-developed perch, wonderfully natural in form and colour, is the piscatory centre of attraction, and decidedly will be the observed of all tasteful observers.

From the great manufactory of Dresden china, at Meissen, we have a very large display of vases and human figures. In the vases every detail is carefully given; but there is a remarkable superabundance of ornament. In this Saxon department there are some prettily-shaped but badly coloured lace figures. We were much struck here with a cup, cover, and stand of emerald-coloured porcelain. The colour is singularly even. Our very old friend, the Chinaman, represented in the act of singing and accompanying himself on a musical instrument, confronts us under the Saxon banner. His wrinkles and unmistakable "rule the roast" expression are as strongly marked as usual, and he still wears his old coat of that peculiar reddish brown hue which we have never seen in any porcelain save that of Dresden. Opposite him is his wife, as submissive looking and uninteresting as ever. After visiting the old vagabond Chinaman, let not the reader forget to glance at those pretty water bottles of terra-cotta, ornamented with raised figures, not very remarkable for their execution.

In the Berlin collection there is some very perfect painting on porcelain. We strongly recommend our English manufacturers to have a look at the beautiful colours, more especially the greens and blues, for which the Prussian china is remarkable. The Berlin vases want, as a rule, that lightness and elegance for which the French vases are pre-eminent. But no one can pick a hole in the splendid Parian nautilus shell, with its lovely mermaid supporters.

In various courts, both British and foreign, there are to be seen exceedingly elegant imitations of Greek and Egyptian vases. We are surprised that no ingenious and enterprising manufacturer has thought of copying a few of those clay books prepared many centuries before Christ by the cunning hand of the Assyrian potter, and lighted on some years ago by the indefatigable Mr. Layard in the palace of the mighty Sennacherib. The library of that prince seems to have consisted of at least 2,000 brick volumes of various shapes and sizes, many of them fashioned like cylinders, not a few six-sided, and for subjects relating to all manner of things. There were to be found primers in clay, old almanacs in clay, receipts (stamped, of course) in clay; love letters and business letters in clay; history books in clay. These old bricks, according to that most erudite of antiquaries, Mr. Samuel Birch, are composed of clay and straw, and were dried in the sun.

CHURCH, CHAPEL, AND SCHOOL BUILDING.

READING.—The conveyance of the Greyfriars' Church here, for many years used as the town Bridewell, has been executed by the Corporation, with the consent of the Lords of the Treasury, to the Rev. W. W. Phelps, who has collected half of the £10,000 required for its restoration.

SOUTHPORT.—The foundation-stone of a new church has just been laid at Ecclesfield, Southport, by Lord Skelmersdale. The building will accommodate about 1,000.

HUXTS.—Mr. Edes is about to restore the Church of Spaldwick in this county. It has some good points—three screens in original position, separating the nave and chancel, the aisles and chantry chapel, and the chapel and chancel. There remain traces of the rood loft on the jambs of the chancel arch, and two sixteenth century seats remaining, together with some Norman mouldings.

OXFORD.—The new church of St. Giles's was consecrated a few days since. The style adopted is the Gothic. The plan embraces a nave, with an aisle on each side; the chancel, formed under the tower, with an apse at the east end; and north and south transepts abutting from the tower. The vestry is on the north side. The approaches are from the west end, a porch leading to the south aisle, and a door in the end of the south transept. The tower stands at the east of the nave, between the apse and transept, and is intended to be surmounted by a lofty spire. In the interior are some peculiar features. The columns supporting the clerestory walls are solid blocks of polished Aberdeen granite. The groining in the chancel roof is in bands of different coloured stonework, springing from polished Devonshire marble columns. The same kind of columns are also used in the sedilia, and in the windows of the aisles. The roof of the nave is arched with plain boarding and moulded ribs, the only timbers showing being the cross-beams and ring-posts. The roof altogether is by no means plain, being decorated with painting in bands and panels of brilliant colours. The height of the roof is sixty feet. The floors are laid with tiles, in patterns of various colours and designs, the chancel being of Minton's encaustic work. The tiling is also used against the wall of the apse to the height of the window-sills. The altar, of oak, stands against a stone wall, intended to support the reredos. Oak screens, in connection with the choir stalls, are placed

across the transept. The pulpit is in stone, marble, and alabaster. The font is of different-coloured stone, elevated on a floor laid with ornamental tiles and marble squares. The cost, up to the present time, has been about £7,000, leaving the carving, sittings, and spire to be provided for. These will cost nearly £2,000 more. The architect is G. E. Street, Esq., London; the builders, Messrs. Joseph Castle, of Oxford.

YORKSHIRE.—Aberford Church has just been re-opened, after undergoing the process of restoration. The design is Mr. Salvin's, and is in the early decorated style. The building is entered by a porch on the south. The windows are all decorated with corbels. The east window is of stained glass. The pulpit is of Cuen stone, on short pilasters of Cornish serpentine marble. The north and south aisles are separated from the nave by colonnades, which contain four pillars and arches. The nave is lighted by sixteen clerestory trefoil windows; the north aisle by four two-light windows, while the south has a lesser number, owing to the presence of two doors. The roof is open, of light appearance, the timber stained and varnished. The whole is supported on corbels and ribs, forming circular arches. At the west end of the church, there being no arch into the tower, is a small and light gallery. The expense of restoration has been about £3,000.

WESTBURY-ON-TYDM.—The beautiful reredos, which is carried round the apse of the chancel of the Church of the Holy Trinity, SS. Peter and Paul, in this place, is now uncovered. The following description of this work of art we cull from a local contemporary:—"The stone-work was finished about this time last year, and consists of a large centre panel, containing 'The Last Supper,' carved in high relief, adapted from the great fresco, by Raphael, in the suppressed monastery of St. Onofrio, at Florence. This occupies the whole of the space over the communion table, under a beautiful canopy, surmounted by a figure of 'The Good Shepherd.' On either side of the apse is an arcade of four arches, with recessed panels. Colour has been very sparingly introduced into the central subject, as the bold relief of the sculpture does not require such addition. The nimbi of the heads are gilded, as well as the diapered background. The first and second tables of the decalogue are introduced into the first and third panels on the north side, and the Creed and the Lord's Prayer into the first and third panels on the south side. The lettering is of a distinct character, with illuminated and gilded capitals, and other ornaments introduced. This occupies four out of the eight panels. The ground-work of the remaining four panels is coloured with rich diaper work, and two large medallions painted in each. The western panel, on the north side, has the cross keys and sword, as being the emblems of the dedication of the church, and the pelican as emblematical of the atonement. The opposite panel on the south side has the Agnus Dei, and the monogram of the sacred name. The four medallions in the centre of the eanted side of the apse have the symbols of the four Evangelists. The buttresses, cusplings, crocketings, Tudor flower-crests and angel-finals, surmounting the canopies, and coloured so as to harmonise with the general effect, relieved with gold, properly used in the upper portions of the work, in order to reflect the light which falls upon them, produce a general rich and brilliant effect, which, blending with the four beautifully painted windows by O'Connor above, form an admirable continuation of colour. This arrangement of colour is in strict accordance with the practice of treating works of a similar character in our ancient parish churches, and that something of the sort did exist at Westbury church is proved beyond doubt by the number of fragments of alabaster figures, richly painted and gilded, discovered beneath the floor of the chancel when it was repaired. The modern roof is the only part which detracts from the beautiful appearance of the chancel, being of painted deal, and of a poor and miserable design." The whole of the works carried out in this church have been under the direction of John Norton, Esq., architect, of 24 Old Bond Street, London, and Park Street, Bristol. The colouring and decorating the reredos were entrusted to Mr. Castell, of 45 South Moulton Street, London. The stone work and carving are by Farmer, of London.

BICESTER CHURCH.—A subscription, headed by the Bishop of Oxford, has been set on foot for the restoration of this church, which is one of the largest in the diocese. It is contemplated to take down the whole of the galleries, restore the chancel, re-seat the church with open pews, and to introduce a stained glass window or two. The cost is estimated at £3,000, about a half of which sum has already been subscribed. We hear that the plans of Mr. Beazley, of Gower Street, have been adopted, and trust that every dutiful son of the Church will aid in the good work.

SCHOOLS.

STAFFORD.—The new Grammar School here has just been finished. It is built in a modified Gothic style, of brick, with white stone dressings. The erection is divided into two chambers—each apartment being about 70 by 30 feet. The roof is of open timber, and of considerable altitude. The windows are large, and shed a flood of light and cheerfulness in upon the scholar. Mr. Ward is the architect, and Mr. Espley the builder. Its cost is about £3,000. We may also add, that the master's house adjoining contains several special class-rooms. On its top story are sleeping apartments for boarders, having direct communication with the school by means of a winding staircase in a little bell-turret at the side of the building.

KINGSLEY AND WHISTON.—The trustees of the endowed schools at these places are about to erect new school buildings. In the first the buildings comprise schools for boys, girls, and infants, with class-rooms; residences for both master and mistress, and play-grounds and conveniences for each school. In the latter place, an infant-school and residence for the mistress will be erected. The architect is Mr. Sugden, of Leek.

ABERDEEN.—A few days since the foundation-stone of a memorial school was laid, in connection with the church of St. John the Evangelist. It will be called the Cheyno School, will be erected in the Gothic style (so as to be in harmony with the church), and will cost £1,200.

SCARBOROUGH.—Last week the foundation-stone of a new Sunday-school, in connection with the Bar Church, was laid. It will be twice the size of the former one, and, with the site, will cost over £1,000.

SCIENCE AND ART DEPARTMENT.

ON Friday last the House of Commons went into committee and supply. On the vote of £116,695 for the science and art department, an interesting conversation took place. After Mr. Adderley, Mr. Lowe, and Mr. Cogan had made some observations on the Museum of Irish Industry and Sir Robert Kane, Mr. Dillwyn said he doubted the propriety of soliciting the public money for schools of art, however useful they might be in themselves. He doubted the advantages of government aid in promoting art. That art and manufactures had advanced of late he had no doubt; but it was due, he believed, to the impetus given by the Exhibition of 1851, and which was being repeated in the Exhibition of the present year, and the competition thus occasioned, rather than to any direct government aid in the shape of art schools. He therefore proposed that the vote should be reduced by the excess on this account over the vote of last year. He moved to strike off from the total sum of £7,106 the aggregate of excesses on various items which he referred to.—Mr. H. Seymour supported the amendment, reminding the committee that if they determined to confine the vote to the same amount as last year, no harm could be done, as the department had now in hand a balance of £22,000. With the views of the government upon the subject of education expressed this year, he considered that it was most inconsistent on their part to ask the committee to increase the expenditure under this vote. He doubted very much the expediency of the expenditure upon the photographic department.—Mr. A. Smith concurred in the complaint of the amount of the vote. He thought all the government ought to do with regard to science was to purchase collections and place them in museums.—Mr. Black thought the state was taking upon it that which ought to be done by parents of the higher ranks themselves in the education of their children. He was, therefore, prepared to vote against the sum for science and art.—Mr. Blackburn also opposed the vote.—Mr. Lowe said it had been the pleasure of the house to found this department of science and art, and the only question was whether its object had been answered. He fully believed it had been. Let it be asked where the designs of Copeland and Minton originated? Where the designs of terra cotta at the Horticultural Gardens? The design after Luca della Robbia? Why, in the designs of the students of the art schools. Where did the students at the Royal Academy first learn the principles of art? In the schools of the Science and Art Department. It was complained that this vote was increasing. That was the very merit of it. If the principle were a wrong one, let it be altered. But, so long as they adhered to the rule laid down, there was a necessary increase, especially in the provisions for the circulation among the country schools of examples and diagrams of art, and the expenses of the carriage and package of those articles in the preparation of photographic apparatus. With regard to the latter vote, he might observe that they had given up distributing positive photographs; they now sent negatives only. The increased establishments necessarily involved a large outlay for the officers, keepers, assistants, and clerks of the various collections. The picture gallery which had been erected had formed a model for that in the Exhibition, which he was sure they all admired.—Lord H. Lennox said that the discussion had proved that all those institutions which were supported by public money should be represented by a responsible minister. He looked upon the South Kensington Museum as a national institution, which well deserved all the support it had received. To it belonged the credit of originating a system of circulating copies of works of art throughout the country, thus rendering the collection purchased by the public not merely a metropolitan but a national collection.—After a few words from Colonel Sykes and Mr. Ayrton, Mr. Dillwyn replied, and said it was his intention to reduce the gross vote by £7,106.—The committee divided. For the reduction of the vote, 48. Against it, 111. The vote was then agreed to.

THE MIDDLE LEVEL CATASTROPHE.

THE destruction of the sluice and bridge connected with the Middle Level outfall, which cost £30,000 for construction, has been attended with fearful results, including the inundation of a thousand acres of land, and a considerable destruction of property. The entire drainage of a vast portion of the fens between Lynn and Peterborough depends upon this cut, which has been regarded as quite a feat in drainage, and it empties itself into the Ouzé about three miles above Lynn. On the 4th inst. the bridge and sluice were entirely destroyed (it is supposed through being made on a smudgy foundation) and a house or two engulfed. Since that time the most strenuous exertions have been put forth to construct a dam for the purpose of keeping out the tidal waters, but all has failed, though between twenty and thirty barges filled with sand have been sunk (only to be washed away as if they were toys), and about 20,000 sand bags have been thrown into the river. The spring tides have, therefore, rushed up the cut with unbounded velocity and power, throwing down bridges, forcing huge breaches in the banks, and inundating vast tracts of land. On Monday afternoon last the tide washed a barge from her mooring, capsized her, drove her against St. Peter's Bridge, and dashed it to shivers. During the first tide on Monday two breaches were made in the bank on the north-west side of the cut, about a mile apart. One of these was successfully stopped, but the other spread, and when we were there it was not less than fifty yards wide, and the water was rushing through with a sound like "the shout of a mighty cataract." The sight here is awfully grand; as far as the eye can reach is one vast body of water. Houses were submerged eight or ten feet, and a number of stacks were seen floating about. The line to Wisbeach from Lynn was beneath water for nearly a mile, and the trains were unable to run; the telegraph posts were washed away, and a stack of straw floated on to the railway lines and there rested. It was computed that there was, or would be, in a few hours, not less than 7,000 acres of some of the most productive land in England beneath the water, and it is feared that by Friday (to-day, which will be the highest tide), not less than 150,000 acres of land will be inundated. The destruction of all this property is frightful to contemplate, and ruin is staring in the face a great many

of the tenant farmers, as their countenances testify. We believe there is no expectation of being able to construct the dam till the neap tides. The cost of repairs which are rendered necessary, apart from the loss of property by the flood, it is supposed will not be much less than £100,000. The works are being vigorously prosecuted by about 500 men under Mr. Leather, contractor. The following engineers have inspected the damage:—Sir John Rennie, C.E.; Mr. Hawkshaw, C.E.; Mr. Fowler, C.E.; and Mr. Smith, C.E. Magdalen Fen, and a portion of Broad Fen and Marshland Fen, are under water now.

ON THE LIFE OF WELBY PUGIN.*

IT is an evident fact, but scarcely a truism, that any man who in these days would be a reformer in art must bring to the effort an extraordinary power of mind; and it seems to me that this power may be spoken of as of three kinds—the power of logic, the power of design, the power of enthusiasm; muscular intellect, magical imagination, electric passion; the head of the man, his hand, his heart. For the sake of illustration let me cite, as men whose fame is familiar to us, of our own day, and of our own province, Ruskin, Barry, Pugin. Ruskin, the subtle thinker, the exquisite poet, not without the ability of design—far from it; not without fervid zeal—far, indeed, from that; but, beyond all, the keen critic, stern teacher of the abstract. Barry, the graceful master of the pencil; the clear-headed, nimble-fingered, unimpassioned worker, working steadily in silence, and winning the day, without a word of philosophy, without a flutter of emotion. Pugin, the visionary dreamer, a man of most laborious hand, of refined and fertile fancy, of solid intellectual strength; but a wrestler wrestling fitfully in heat and rage, and losing the day—the more the pity—his philosophy in tatters, and his passion a wreck. And if you require me to suggest who shall be called the greatest of the three, I must ask Barry and Pugin to divide my suffrage—the one the sailer with the stream, the other the sailer against the stream. It is no disparagement to the sailer *above* the stream if, in the judgment of practical minds, he must here give place to practical men.

I cannot, perhaps, set forth my views of Pugin in a single sentence better than this. He was a genuine reformer of art; no mean office. He combined in his own person all the three species of reforming energy;—no usual thing; and he combined them in no usual force. Passion of the most passionate on earth reigned within him supreme. His artistic ability was of the highest order of his day—the very highest. As for logical skill,—even of this he had enough for his mission, and, what is more singular, he had not too much.

He died but ten years ago; he lived but forty years. To some of us, when we look back reflectively, it would almost seem as if he had died a century since, and lived a century: so much seed did he sow; so much fruit has it produced.

I have thus, I think, made sufficiently clear my purpose for to-night. I am to speak of Welby Pugin, not as an odd fish, not as a crazy fanatic, not as a lost and wasted light, not as a defeated foe; but as a giant in his day, of whose stature the vocation which we represent may fairly and for many a year be proud: a man of genius—of such strange genius as to appear rather the ideal of some old romance than the living compeer of yesterday.

The life of Welby Pugin was of three chapters: his youth, his manhood, his eclipse. It will be interesting to make one chapter more, that we may understand his origin—the origin, that is to say, of his career—that which brought about his mission, and brought him forward to meet it. To sketch these four chapters of the history of the art-reformer can scarcely fail to prove instructive and stimulative to earnest minds. On the other hand, to follow the journey of the man—to mark his uneasy footsteps, his persistent but fallacious purpose, his ultimate disappointment and despair—may encourage most of us to be well pleased that we are not men of genius.

I. THE CHAPTER OF ORIGIN.

Welby Pugin, born in 1812, had begun by 1827 to be an acknowledged artist. The first question, therefore, is this,—What was the state of things into which in 1827 this destined reformer came? The second question follows,—What was he, how prepared, who came as he did into this state of things to be a reformer?

At the close of the last century, the condition of English architecture was this. The practice of the Classic style had degenerated into a certain imbecile frippery that cannot be denied, and need not be described—more tatters of Cinque-centist design patched together in lath and plaster, casing and cradling, hollow iron, and sanded wood. The practice of a certain Mediæval style had recently come in as a new fashion, and upon the self-same easy principles. Horace Walpole's Strawberry Hill, Batty Langley's fine orders of Gothic architecture, James Wyatt's ecclesiastical restorations, and the Carlton House conservatory "in imitation of a cathedral," are fair samples of the works which were with difficulty accomplished, and with unanimity admired: the same imbecile frippery, the same tatters of design tacked together, in the same lath and plaster, casing and cradling, hollow iron, and sanded wood.

During the first quarter of the new century, matters improved to some extent. The close of the war set Englishmen all upon their travels; and the popularity of the pure Greek school, which had been acquiring influence gradually for sixty years, chiefly under Stuart and Revett, was raised to the utmost by the exertions of many well-known and esteemed writers, some of whom are still with us in honourable age. At the same time, in Gothic, John Britton felt emboldened to commence his celebrated illustrations of the English Cathedrals (in 1816); following the issue of his "Antiquities," begun in 1806, which followed again the publication of Carter's "Delineations," commenced in 1795. Nevertheless, in both styles, although the delineation of ancient examples, and the art of imitating them, consequently, in new designs, was vastly improving, it must not be supposed that the throne of the counterfeit had in any material degree been shaken. In metropolitan buildings, whilst Doric porticos of painted composita hid flimsy fronts of no one knew what; whilst neat baronial dwellings in the country affected to keep the villages in awe by sham cannon peeping out of embrasures of wood.

In these circumstances there came into some note in London the elder Pugin. He was a French refugee; and had been for many years employed as an office draughtsman by Mr. Nash, the then great king of all this composita architecture, when at length, being about the age of fifty, he married, and in course of a little time established himself in independent business as a professed architectural

author and designer, as we may call it, to the trade, with an office and half a dozen pupils—ruled by his lady with a rod of iron.

The taste of the elder Pugin was altogether Gothic; and his first publication, which appeared in 1821, was entitled "Specimens of Gothic Architecture,"—a work even yet well known. Britton's "Antiquities" had been before the public for a good many years; and his "Cathedrals" had been for five years in course of publication. Pugin may be said, therefore, to have merely followed the lead of others; but his engravings were so good and serviceable, that his work had a decided success, and his name became well known. In 1826 he published another similar work, on the "Antiquities of Normandy." Britton being here associated with him, success still attended his efforts; and he afterwards published other similar works. But we have now arrived at the period when his son, the proper subject of this sketch, began to attract attention, as himself an artist of note, in 1827, as has been said, at the age of fifteen.

Meanwhile, the Eclectic school of practice had come fully into public authority, and Greek and Gothic were recognised as the two great sister styles of architecture, which never could become rivals. To remind you of the buildings which were being erected at or about that time, I may mention Wyatville's Windsor Castle, Soane's Bank of England, Wilkin's University College, Smirke's Post Office; Mr. Cockerell's earlier works, such as St. George's Chapel; Mr. Tite's Scotch Church; Mr. Poynter's St. Katherine's, Regent's Park; Nash's Haggerstone Church, and Barry's churches at Brighton and the North of London.

The condition of architecture at the time of Welby Pugin's youth will thus be pretty clearly understood. The state of stupor of twenty years before had so far changed, that leading practitioners were displaying considerable refinement of design, chiefly in Greek, partly in Gothic; and, although it must not be disguised that inferior men were daily exhibiting all the imbecility of style and imposture of construction which had characterised the preceding age, yet the art, as a whole, was manifestly coming towards that stage of amendment when reform step in.

The train of circumstances which had produced the character of young Welby Pugin may also be tolerably clear. In the best Gothic school in London, an only son of the clever, earnest, and hardworking master, and the equally clever and most indomitable mistress, had grown up clever, studious, and indomitable, to nearly man's estate. He had been clever from the cradle; from early boyhood he had been a draughtsman as if by intuition; and it may as well be at once confessed that it was very early seen that he was to be a wilful, wayward, passionate, and indeed eccentric man. This was precisely the person to become a reformer.

Of the other reformer of the day it is not within our present province to say much; but, to give due effect to the mission of Pugin, we must not forget that Barry was his contemporary. For the reform of architecture was destined to take not one direction only, but two; and up to the present moment, great as have been the results of Pugin's leadership in Gothic, those of Barry's leadership in Italian have also been very great. Of these two famous men, Barry carried a funeral light in St. Augustine's when he who was so strangely his comrade, and never his rival, was laid sadly in an almost neglected grave; and when we buried Barry in honour beneath the ancestral roof of Westminster, bigot as Pugin was, if he had lived he would have been there.

II. THE CHAPTER OF YOUTH.

At fifteen, old Pugin's skilful and enthusiastic boy, finding the regular work of his father's office a bore, was picked up by a fashionable silversmith, to be turned into money in the designing of fashionable Gothic plate. I always pity a manufacturer's artist. I picture the ready fancy and the skilful hand continually kept under a cloud by the decrees of the counting-house. Before long it was worth while—that is to say—for Messrs. Rundell & Bridge to boast of this and that goblet and dish as the design of young Mr. Pugin; but I dare say there was otherwise little, if any, departure from the time-honoured custom whereby the individuality of the artist is swallowed up in "the well-known reputation of the firm." No doubt there are art-manufacturers listening to me now; they are honourably esteemed and encouraged here, and long may it be so; let me be excused by them for what I now say; but there is a maxim which I would fain urge upon them as a manly principle—and a principle that will pay, I am sure, however improbably, because it is a manly one, and ought to pay. Pity your poor artist, and give him at least the credit of his work; boast of his name, if you please, but do not boast of his work and call it yours; take the money, but let him have the fame.

Pugin was soon picked up again, however. This time it was an upholsterer who got hold of him; and his work was to design Gothic furniture for Windsor Castle. Out of this engagement nothing particular arose, except, quite accidentally, his first grand whim. He was of the age of fifteen, remember, for it was only June 1827.

Whims are the incentive efforts of genius. There are some people who never get beyond this whimsical stage; perhaps they are to be geniuses in another world; but there are others who get through it early. Pugin was one of these last; he went quickly over the ground; but the whimsicality was stupendous. So now comes his first.

At the upholsterer's he met the son of a scene-painter of Covent Garden theatre. He had never been in a theatre in his life; the only theatre to which his Puritanical mother took him was the chapel of the fanatical Edward Irving, the apostle of the Unknown Tongues. "Terribly long sermons," he would say; an hour and a half at a time, and he couldn't understand a word of it. Now, however, he went behind the scenes at Covent Garden, and at once understood all about that. Gothic scenery was fashionable. He made a rush at the subject: studied the processes of painting and machinery, and for some time, as a mere boy, was the great Gothic designer of such things. Not content with this, he cut to pieces the attic story of his old father's house in Great Russell Street, formed it into a theatre of his own, and there revolved in designing (to use the words of Mr. Ferrey) "the most exquisite scenery, with fountains, tricks, traps, drop-scenes, wings, soffites, hilly scenes, flats, open flats, and every magic change of which stage mechanism is capable." Suffice it to say that he rode his hobby very hard over this pleasant landscape for about two years without drawing rein; then suddenly throwing it on its haunches, with the unceremonious kick of genius, he dismissed it for another whim.

His new passion was the sea. Whether the ocean is a Gothic element in these days, when everything is matter of opinion, might be a question for debate; but Pugin loved it to his dying day. "There is nothing worth living for," he would say, "but Gothic architecture and a boat." A sort of Garibaldi

* Read by Professor Kerr at the Architectural Exhibition, 13th May.

in art, he took the command of a smack, and then of a schooner, and went into trade. At length old Neptune—perceiving, perhaps, that one more foolish young rover was ripe for a lesson—cast him lamentably upon Scottish rocks, and left him half-drowned and half-starved to seek a friend where he might. He made his melancholy way to Edinburgh; went courageously to one of the principal architects, and introduced himself and his misadventure. Gillespie Graham clothed and fed his erratic professional brother joyfully, put a purse in his pocket, and sent him home to London, with a dose of sound Caledonian counsel, and a keepsake whereby to remember it—the good man's silver compasses. All this produced satisfactory results. On his arrival in London the repentant sailor took earnestly to art. Six years afterwards one of the most striking designs for the Palace of Westminster (some said it was the best of all) was Pugin's work in Gillespie Graham's name. In Herbert's portrait, after many years more, Pugin holds in his hands the venerable silver compasses.

The date of this not unfortunate shipwreck was 1830; and the ruined commander had reached the age of eighteen. He now took to art, I have said; he took to it, however, still whimsically.

The next was an architectural whim,—the establishment of a factory for Gothic carving. He took large premises at Covent Garden; engaged carvers, and undertook the supply of ornamental work for architects, in all quarters of the country; making, of course, his own designs of detail, as he alone, even at eighteen, could make them. It seems a hard thing to say, but we are scarcely surprised to be told, that within a few months the speculation proved a total failure.

The idea seems ridiculously natural, but one might fairly say that, amongst all these whims, it is a wonder he had not married. Well, he had married. "I had married," he would tell you, "twice before I had shaved once." It was a short courtship; the young wife came from the scene-painting connection; she was taken home to old Mr. Pugin's house in Great Russell Street; the parents much disapproved the match, but they did not dare to thwart their wayward son. The poor girl, however, proved an affectionate companion; and when she died, within the year, the boy-husband's heart seemed broken. The desolate youth, in his infinite depression, looked back upon his past life. To smile at his hyperbole would be sacrilege. He was not twenty: he looked back over six years: there had been crowded into those six years—even his stern mother said so—"a whole lifetime of woe." Whim after whim: he resolved to seek out for her burial some pleasant place after the pleasantness of his own old fancy. He took her to Christchurch, in Hampshire, because it was a pleasant place. Three weeks after her death he laid her in the vault, with unusual ceremonial, at eight o'clock at night. Perhaps it was a comfort, perhaps an embarrassment: she had left behind her the sad legacy of a new-born daughter.

Whim after whim; he was not yet twenty, and we lose their reckoning. He now resolved to build himself a model house. It would seem that he had cherished this whim for some time, young as he was. He would build in the Mediæval manner, of course: not in the manner which Nash and Wyatt followed, but in what that manner ought to be. He fixed upon a piece of ground near Christchurch, where he had so lately buried his young wife. All was speedily in readiness except one thing—the money.

We all know how inflexible a thing this is; how the money will always have its own way; how it is of no use to coerce it, or to coax it, or to propose any sort of compromise to it; how nothing will weigh with it for a moment but mean mechanical considerations, vulgar reckonings, callous unimaginative arithmetic. It has been the great enemy of poetic and impassioned minds from Tubal Cain till now, and has behaved towards them in a shameful and remorseless way. Young Pugin was positively stopped short on the very threshold of his project by this ill-conditioned adversary. His indignation and disgust may be more readily imagined, as the phrase goes, than described. An application was made to the old gentleman in Great Russell Street to become surety for his son. The drawings, no doubt, were ready; the cost counted; the building staked out; but old Mr. Pugin was seventy. He declined the investment. And, what is more discreditable still to human nature, there is not a soul in this room who does not consider him to have done quite right.

However, in the same year, 1832, old Mr. Pugin died, in December; and early in the year following died his widow. All that we have to remark about them here is, that they seem to have been buried quietly and without a whim, at Islington, under the control of Mrs. Pugin's sister, who had long dwelt there. Mrs. Pugin, in her youth, had been the belle of Islington, although her beauty was of the severe order. An eccentric gentleman once said to her, "Madam, how exceedingly like you are—to the devil!" And she accepted the remark as a compliment.

III. THE CHAPTER OF MANHOOD.

The year 1833 saw Welby Pugin, at the age of 21, an orphan, a widower, a father; one who had seen ups and downs in the world; one who had had his projects, and had some of them still.

He was a slovenly, ordinary-looking person; impatient, dogmatic, and whimsical; sailor-like in dress and habits, with a redeeming dislike, however, of beer and tobacco, and a still more redeeming brightness of enthusiasm in his eye. In all his ups and downs his memory had never ceased to accumulate its stores of Gothic art, and his rare right hand had not forgot its cunning. He now began in earnest the battle of life. It will be seen that his ardour, although all unabated, and still like no one else's ardour, was now the steady purpose of manhood, and no longer the caprice of a boy.

He at once married again. The new connection was still somewhat hastily and enthusiastically formed; but the lady was one who proved worthy of his respect, and competent to influence him for good throughout the best part of his life.

He went to reside at Salisbury, and became as nearly as possible a man of business,—a practising architect. At first he passed a good deal of his time in Gothic sketching and study, making a tour, indeed, of the English cathedrals for this purpose. He everywhere found restorations, repairs, re-arrangements, in the manner which we described a little time ago. He disapproved of them. He expressed himself vehemently about them. "I rushed to the cathedral; but, horror! dismay! the villain Wyatt had been there! All that is vile, cunning, and rascally is included in the term Wyatt!" Again,—*"The church is in dreadful repair—fall it must; and all that is to be hoped is, that in its fall it may annihilate those whose duty it was to have restored it."* Again,—*"The church was improved and beautified about thirty years ago by the late Mr. Wyatt. Yes—this monster of architectural depravity, this pest of cathedral architecture,*

has been here,—need I say more? The man, I am sorry to say, who executes the repairs of the building was a pupil of the wretch himself, and has imbibed all the vicious propensities of his accursed tutor." We can only say, that this was, at the worst, very sound criticism, and at the best very rough language. Sound criticism and rough language were to be his through life.

Soon after his settlement at Salisbury, a relative died, bequeathing him a considerable legacy. What was he to do now? There is a logical certainty about some people's most odd doings—a method in their madness—which enables us to guess to a nicety what they are to do next. Pugin's aunt left him money, and the question is, What was he to do with it? Money?—why, money was the identical thing which stopped him short in the matter of his house. He would build his house with it, of course! He selected a suitable site in the neighbourhood of Salisbury, bought it, and forthwith erected his long-contemplated Gothic dwelling. It was what may be called a plain fifteenth-century square brick house, of three stories, with a high-pitched and crested-hip roof; and there were two attached turrets,—one constituting a small porch below, and a belfry at the summit.

The elevations were altogether unsymmetrical, and, I think, more in the simple, ungarished, and unaffected spirit of Mediæval domestic work than any other modern design of the kind I know. The high road in front of the site being some feet above the ground within, and the lowermost story being therefore formed as a basement of kitchen offices, the entrance-door was reached on the first-floor level by the not inappropriate but needless means of a small draw-bridge. The rooms are generally described as having been quaint and uncomfortable; but there was nothing in it to mark as yet the peculiar mission of the man, except, perhaps, the domestic chapel, and the hagiocope by which the occupants of the bedchamber story might listen to the service at early morning.

The plan generally is pronounced to have been more modern in its principles than ancient. The decoration, fittings, and furniture, were of course in Mediæval style, the design of the owner's hand.

Meanwhile, he had brought out several books illustrative of Gothic art. During the years 1835 and 1836, he published no less than four volumes of designs, in so many various departments of his favourite style, namely: first, his "Gothic Furniture," and succeeding this, his "Iron Work," "Gold and Silver Work," and "Ancient Timber Work." Although the knowledge of what we call Mediæval principles has vastly progressed since that time, no one who examines those early works can wonder that they attracted great attention, became the accepted authorities on their subjects, and established the reputation of their author as the leader of the new-fashioned Gothic style of ornamental art.

(To be concluded in our next Number.)

PROVINCIAL NEWS.

THE SCARBOROUGH PIER AND IMPROVEMENT COMPANY.—The proposed public works in Scarborough are likely to be speedily commenced, as they have received the support of a public meeting in that town. Mr. T. Page, C. E., is the engineer employed, and the consulting manager is Mr. W. Northhouse.

THE THEATRE AT BATH.—The recent destruction of this elegant building by fire was a matter of regret to all the inhabitants, and sympathy has been expressed generally for the great loss personally sustained by Mr. Clute. A thorough-going agitation has produced a meeting of the most influential citizens, and it was resolved at that meeting to re-erect the Bath theatre. This will be effected through a limited liability company, with a capital of £12,000. We understand the design for the new structure will somewhat alter and increase the accommodation, but the general arrangements of the stage the architect (Mr. C. E. Davis) leaves to be restored almost according to the design from which the former theatre was built.

PAINTED WINDOWS.—We understand that the Revs. A. and F. Sutton have just presented their fifteenth and sixteenth painted windows to Lincoln Cathedral, and also the east window to St. Botolph's Church in that city.—The whole of the memorial window to Bishop Sharpe of Doncaster is now on view in the International Exhibition. The position is not altogether a favourable one, still it seems to us that the window, as a whole, is not quite up to the mark, either as to design or colouring. Each compartment, when viewed separately, does not leave this general impression. It may be, however, that when the window is fixed in its intended position, this thinness of aspect may cease to present itself.

THE GAS WORKS AT DONCASTER.—Mr. Fairbank, of Scarborough, has completed the large gasholder at the works here. The cost is about £5,000. The holder is of wrought iron plates, and in its construction 170 tons of iron have been used, and 106 tons have been worked up in the columns supporting the balances, the pedestals, &c. The diameter of the holder is 115 ft., its height 20 ft. 6 in.; so that at a rough calculation it is capable of containing 225,000 feet of gas. The excavation for the holder tank was to the extent of nearly 7,000 cubic yards.

DOVER WATER WORKS.—It has been settled, we believe, by the Town Council of Dover, to lay out £8,500 on the improvement of the water-works. The cost of the present works was nearly £25,000.

PUBLIC ROOMS AT CAMBRIDGE.—These fine buildings, from designs by Messrs. Peck and Stevens of Maidstone, have just been opened. They consist of an assembly-room, free library, suites of rooms for the School of Arts, Town Clerk's office, &c. The assembly-room is of an Italian design. The side walls are broken up by means of pilasters and surface panels, surmounted by cornices and balustrades, upon which line the windows are placed, the pilasters being covered up, and finished with cornices and ornamental foliage. From hence the walls unite with the ceiling by means of a cove, with projections from pilasters continued on ceiling, the soffits of which are filled with ornamental foliage, perforated for ventilation. The end of the room is circular, on the same plan and with the same description of decoration as that of the side-walls. Over the entrance to the room is a small gallery. The other parts of the structure are in keeping with the main feature.

ARCHITECTURAL EXHIBITION.—On Tuesday evening a lecture was delivered at the Architectural Exhibition, Conduit Street, Regent Street, before a numerous audience, by Professor Kerr, "On the Character and Career of the late A. W. Pugin." The chair was occupied by Mr. E. B. Lamb, and at the close of the meeting a vote of thanks to the lecturer was carried by acclamation. The next lecture will be delivered on Tuesday next, by Mr. W. Burgess, on "Pagan Architecture."

THE ARCHITECTURAL MUSEUM.—A meeting will be held at the Architectural Museum, South Kensington, on Tuesday next, when a lecture will be delivered "On Ecclesiastical Architecture in Georgia and Armenia," by the Rev. George Williams, B.D.

CRYSTAL PALACE.—The great flower show of the season will be held on Saturday, May the 24th. Taking place on the Queen's birth-day, a day which this year unhappily will be unattended with the usual military displays, drawing-room, or other rejoicings, a large number of distinguished and official personages will have leisure to attend this, one of the most attractive displays of the season. Additional interest is excited on this occasion from the announcement that the great roof over the Handel orchestra, which has been so many months in preparation for the festival in June next, will be completed before the day of the flower show.

TENDERS.

ALTERATIONS, HACKNEY ROAD.

For certain alterations to "Pritchard's Arms," Hackney Road, for Mr. Bobotham; Mr. W. J. Green, architect.

Patrick and Sons.....	£970 0 0	Langtree.....	£604 0 0
Longmead.....	750 0 0	Rankin (accepted).....	530 0 0

COVERED MARKET, DARLINGTON.

Twelve tenders have been made for the erection of the projected covered market, and though submitted to the local Board of Health, we believe no decision has yet been come to in the matter. No. 1 tender was for £10,374; No. 2, £10,113; No. 3, £9,303; No. 4, £8,871; No. 5, £8,815; No. 6, £8,621; No. 7, £8,574; No. 8, £8,501; No. 9, £8,411; No. 10, £8,402; No. 11, £7,815; No. 12, £7,759.

CHAPEL, OLD KENT ROAD.

For additions and alterations to Marlborough Chapel, Old Kent Road.

Thompson.....	£1,733 0 0	Calls and Co.....	£1,234 0 0
Lawrence and Sons.....	1,532 0 0	Hill and Son.....	1,777 0 0
Perry and Dudson.....	1,494 0 0	Dove.....	1,364 0 0
Wills.....	1,479 0 0	Sawyer.....	1,350 0 0
Downs.....	1,456 0 0	Mann.....	1,300 0 0
Child and Son.....	1,399 0 0	Sharplington and Cole.....	1,297 0 0
Calman.....	1,394 0 0		

BUSINESS PREMISES, OXFORD STREET.

For erecting new premises—Nos. 65 and 67 Oxford Street—for Messrs. Hyam; Mr. H. Jones, architect. (Quantities by Mr. Reddall and Wright and Gould.)

Holland and Hannen.....	£10,329 0 0	L. Anson.....	£9,730 0 0
Lucas Brothers.....	10,240 0 0	Brass.....	9,393 0 0
Myers and Son.....	10,210 0 0	Pritchard.....	9,080 0 0
Lawrence and Sons.....	9,970 0 0		

RIVER WORKS ON THE CAM.

For repairing sluice at Baitsbite, and providing new doors for the pen and bridges over floodgates and overfall.

Thadaye and Clayton.....	£525 0 0	R. Fyson, Soham (accepted).....	£475 0 0
Strickson, Hinxton.....	497 0 0		

CHAPEL, STUDLEY ROAD.

For the erection of a new Wesleyan Chapel in the Studley Road; Mr. W. W. Jenkins, architect. (Quantities by Messrs. Lansdown.)

Browne and Robinson.....	£3,598	Walker.....	£3,189
Wardle and Baker.....	3,390	Thompson.....	3,075
Stone.....	3,308	Chinnock (accepted).....	3,040

GRANARIES, WAPPING.

The following were received for two Granaries, Old Gravel Lane, Wapping; Mr. C. Alsop, architect. (Quantities supplied by Mr. F. G. Widdows.)

Dale.....	£2,953	Ennor.....	£2,489
Conder.....	2,540	Johnston.....	2,398

MALT OFFICE, LINCOLN.

Tenders for a new 45-quarter malt office, Lincoln, for Mr. Nesbitt. Mr. Goddard architect.

Jackson.....	£1,420 0 0	Fretwell.....	£1,223 0 0
Smith.....	1,347 0 0	Calvert (accepted).....	1,078 10 0
Kirk.....	1,332 0 0		

Tenders for three lodges at Hartsolme Hall, Lincoln, for Joseph Shuttleworth, Esq.

Yang.....	£1,185 0 0	Fox.....	£700 0 0
Reeve.....	745 0 0	Jackson (accepted).....	640 0 0

COMPETITIONS OPEN.

CATHEDRAL.

CORK.—Architects are invited to furnish designs for the erection of the cathedral of St. Finbar, Cork, at a cost not exceeding £15,000. A premium of £100 will be given for the best and most approved plan, and £50 for the second. Plans and designs to be sent to the hon. secretaries, Ven. the Archdeacon of Cork, Rev. J. N. Woodroffe, or T. M. Osborne, Esq., Cork, not later than the 1st August next. Further information and a plan of the site may be obtained on application to W. C. Bennett, Esq., notary public and Chapter clerk, 15 South-mall, Cork.

CHURCH.

LEAMINGTON.—Plans and estimates, in sections, are required for the completion of the parish church of Leamington. The nave, the chancel, and the north transept being already built, it is intended to proceed to erect the remaining portions of the work in sections. Architects are invited to send in plans and estimates, in sections, for erecting the south transept, the vestry, the lantern tower, and the bell tower; which it is intended to build in strict harmony with the architectural style of those portions of the church now erected. Increased accommodation in the church is most desirable. A premium of £20 will be given for the best set of plans and estimates in the opinion of the Committee, which must be sent, sealed and under motto, to Mr. G. Rogers, Newbold Street, Leamington, on or before the 21st June, of whom all further particulars may be obtained.

SCHOOL.

RADNOR.—Plans and specifications are required on or before the 1st June, for the Knighton National School, Radnorshire, comprising Boys' Girls' and Infants' Schools and Class-rooms, together with Residence for Master and Mistress. For information as to site and other particulars, apply to the Rev. J. R. Brown, Incumbent of Knighton.

LIBRARY AND READING ROOMS.

BIRMINGHAM.—The Free Libraries' Committee of the Council of the Borough require plans, sections, specifications, and estimates for the erection of a free reference library and reading-rooms, lending-library and news-rooms, and gallery of art, upon the piece of vacant land adjoining the Midland Institute Building, with an elevation uniform with the said building. Intending competitors are requested to send in their plans, specifications, and estimates, under cover, to Thomas Standbridge, Town clerk, Town clerk's office, Temple-street, endorsed "Plans for Free Reference Library Buildings," on or before the 10th June. Particulars of the accommodation required, and of the conditions of competition, together with a lithographed plan of the site, may be obtained on application.

MEMORIAL.

GLOUCESTER.—The committee appointed to carry out the Hooper Memorial, at Gloucester, invite sculptors to submit models of designs for the figure of Bishop Hooper, which is intended to be placed under the canopy of the monument just erected in the churchyard of St. Mary de Lode, Gloucester. The models or statuettes to be carved in stone, and to be one-quarter the real height (7 feet). The author of the best design, approved by the committee, will be appointed to execute the full-sized figure; and the sum of ten guineas will be awarded for the second-best design.

CONTRACTS OPEN.

CHURCHES, ETC.

SOMERSET.—For building a north aisle, and making additions to the east end of the parish church of Weston, near Bath. Drawings, &c., with Manners and Gill, Architects, 1 Fountain Buildings, Bath; to whom tenders endorsed "Tender for Works at Weston Church," on or before the 24th inst.

IRELAND.—For the erection of a new Catholic church, to be built at Kenmare. The parish priest will show the plans and specifications, and will receive tenders up to June 1.

WARWICKSHIRE.—For repairing and restoring the parish church of Long Compton, Warwickshire, near Chipping Norton. Plans at the Vicarage, Long Compton, to the 17th May inclusive; sealed tenders, directed to the Rev. H. Lauphler, Long Compton Vicarage, Shipston-on-Stour, on or before the 24th May.

STROUD.—For the several works required to be done in rebuilding the parish church of Stroud. Plans, &c., at the office of Mr. J. G. Bland, architect, Birmingham. Tenders to be delivered on the 20th May. Copies of drawings and specifications will also lie at Stroud for inspection, and may be seen on application to the architect.

ISLEHAM.—For the repair and restoration of Isleham parish church near Newmarket. Plans, &c., at the Vicarage, Isleham. Tenders to be delivered at the Rutland Arms, Newmarket, on the 20th May, at 12 A.M.

CHAPELS, ETC.

USK.—For the erection of a new chapel and vestries on the site of the present Congregational Chapel at Usk, Monmouthshire. Particulars from Messrs. W. G. Habersham and Pite, architects, 35 Bloomsbury Square, London; and Park Square, Newport, Monmouth; and Belvedere, Tredegarville, Cardiff.

MANCHESTER.—For the erection of a chapel and school room, in Booth Street East, Chorlton-upon-Medlock. Sealed tenders to the Rev. T. E. Evans, No. 108 Brunswick Street, Upper Brook Street, not later than the 24th inst. Plans, &c., with Mr. Herbert Jones, 6 Moreton Street, Strangeways.

SCHOOLS, ETC.

LANCASHIRE.—For the erection of the proposed new schools, vestries, &c., at Rawtenstall, Lancashire. Plans, &c., on application to Thomas Hoyle Whitehead, Esq., on and after the 12th May. Printed quantities will be supplied on application to the architect. Tenders to be delivered to Thomas Hoyle Whitehead, Esq., Rawtenstall, on or before the 21st May.

CEMETERY WORKS.

BIRKENHEAD.—For the erection of three chapels, Registrar's house, gate lodge, entrances and boundary walls, for the Cemetery at Flaybrook Hill, Birkenhead, &c. Plans and form of tender at the Commissioners' offices, 35 Hamilton Square, Birkenhead; and further particulars obtained of the architects, Messrs. Lucy and Littler, Tranmere, near Birkenhead. Tenders in sealed covers, endorsed, "Tenders for Cemetery Buildings," addressed to the Chairman of the Cemetery Committee, to be delivered at the Commissioners' offices on or before the 28th inst.

SALE.—For the erection of a fence wall, on the Sale burial ground, near Brooklands station, on the Altrincham railway. Particulars from Mr. William Wilson, architect, 23 John Dalton Street, Manchester. Tenders to the Chairman of the Burial Board, Sale, Cheshire, not later than the 20th inst.

SUSSEX.—For the erection of two chapels and sexton's lodge, and out offices connected with the Burial Board for the parish of Broadwater, in the county of Sussex, on land at Broadwater, intended to be used as a cemetery for the parish of Broadwater and town of Worthing, together with the boundary walls and other works connected therewith. Plans, &c., with Mr. W. Verrall, clerk to the Burial Board, Worthing. Sealed tenders, endorsed "To the Burial Board for the parish of Broadwater, Tender for Works," to be delivered at the clerk's office, 15 High Street, Worthing, before 5 o'clock on the 20th May.

ASYLUMS.

NORFOLK.—For the erection of male and female infectious wards at the Thorpe Asylum, Norfolk, and also for building four workmen's cottages on a piece of land adjoining it. Plans, &c., with R. M. Phipson, architect, County Surveyor, Norwich, to the 24th inst.; and painters willing to tender for painting the whole of the outside wood and iron-work at the said Asylum, may see the specification for it at the same offices. Tenders to F. J. Blake, Esq., Treasurer and Clerk to the Committee of Visitors, King-street, Norwich, on or before the 24th inst., enclosed separately in sealed envelopes, and endorsed "Tender for Infectious Wards," "Tender for Workmen's Cottages," and "Tender for Painting," as the case may be.

DUBLIN.—For erecting a new Asylum at Leeson Park for the Board of Governors of the Old Men's Asylum, according to the plans, &c., to be seen at the office of the architect, William G. Murray, 68 Lower Gardiner-street, Dublin. Tenders to be addressed to T. Collins, Hon. Sec., 25 Harcourt-street, and forwarded on or before the 20th May, endorsed "Tenders for Building."

WORKHOUSE.

HANTS.—For the works required to be done in making certain alterations in, and additions to the Alverstoke Workhouse. Plans, &c., at the Board-room of the workhouse on and after the 14th May, or at the office of Mr. Thomas Hellyer, Bouverie House, Ryde, Isle of Wight, architect, of whom every information may be obtained, and bills of quantities may be had.

INFIRMARY.

ISLE OF THANET.—For the erection of a new infirmary, fever wards, office buildings, a chapel, fence walls, &c., in connection with the present workhouse, situate at Minster, near Ramsgate, Thanet, Kent. Plans, &c., with Mr. Edwards, architect, 17, Hart-street, Bloomsbury, London, W.C., or at the Board-room of the workhouse, where lithographed copies of quantities may be obtained, price 10s. Tenders, sealed, to the Chairman of the Board of Guardians, by 5 p.m. May 21st.

VILLA.

HANTS.—For the erection of a villa residence at Botley, Hants. Plans, &c., at Mr. Harding's harness manufactory, Botley, on and after the 22nd inst. Tenders to the architect, Mr. John Colson, St. Swinith-street, Winchester, on or before the 5th June.

DWELLING HOUSES.

STAFFORD.—For the erection of five houses, at Forebridge, for Mr. John F. Bridgwood, Wolverhampton-road, Stafford. Drawings, &c., with Henry Ward, architect, Bank-passage, Stafford.

DUMFRIES.—For building an addition to the miller's house at Glenesslin Mill, Dumfries, for repairing and building new office houses there, and for repairs of considerable extent on the kiln and mill. Plans, &c., Sir William Brown, Bart., solicitor, Dumfries, to whom tenders by the 18th inst.

FARM BUILDINGS.

WILTS.—For a large farmhouse, homestead, &c., upon Bemerton Farm, near Salisbury. Tenders to Mr. Clarke, Corn Market House, Salisbury, or before the 19th May.

RESERVOIR.

BLACKBURN.—For the construction of a new reservoir, to be called the Fish Moor Reservoir, adjoining the Guide Reservoir, near Blackburn, for the Directors of the Blackburn Water-works. The work will consist principally of an embankment of 47 feet in height, containing about 340,000 cubic yards of material, with the masonry, stone beaching, and other work connected therewith. Plans, &c., at the office of the Water Company, Clayton-street, Blackburn; and at the office of Mr. Bateman, engineer, 9, St. James's-square, Manchester, and sealed tenders (a form of which may be had on application), endorsed "Tenders for Fish Moor Reservoir," must be sent in, addressed to "The Chairman of the Company," not later than the 5th June.

BRIDGES.

GATHEHOUSE.—For building a new bridge over the river Fleet, at Castramont, in the parish of Girthorn. Plans, &c., with Mr. Ewart, Bank of Scotland, Gathehouse, who will receive offers till the 50th May.

WORCESTER.—For the construction of a brick bridge and other work near Martley, Worcester-shire. Plans, &c., with Henry Rowe, County Surveyor, 17 Foregate Street, Worcester, where tenders, under seal, and properly endorsed, are to be delivered (free of cost) on or before the 24th.

POLICE STATIONS.

SIDMOUTH.—For the erection of a police station, &c., at Sidmouth, Devonshire. Plans, &c., with Henry Ford, Clerk of the Peace, Castle of Exeter, and at the office of Messrs. Radford and Williams, Clerks to the Justices, Sidmouth. Sealed tenders, endorsed "Tender for Sidmouth Police Station," to be sent to Mr. Ford, on or before the 3rd June.

ROAD-MAKING.

NOTTS.—For the execution of sewerage and road-making on the North Gate and Beacorn Hill Estates, Newark-upon-Trent, Nottinghamshire. The following rough quantities are here stated, in order to indicate approximately the extent of the proposed works; but parties tendering will have to take out for themselves the quantities necessary for that purpose. On the North-Gate Estate: 30-feet roads, including 6-feet footpath on both sides, 775 feet run; 6-feet footpaths, extra, 410 feet run; stone kerbing to footpaths, 1,550 feet run; paved and pitched channelling outside of footpaths, 1,525 feet run; 15-inch pipe sewer, 35 feet run; 12-inch ditto, 456 feet run; 9-inch ditto, 680 feet run; gully-cesspools, with 6-inch pipe overflows to sewers, 6 in number. On the Beacorn-Hill Estate: 45-feet road, including 7½-feet footpath on both sides, 516 feet run; 7½-feet footpaths, extra, 520 feet run; stone kerbing to footpaths, 1,550 feet run; paved and pitched channelling outside of footpaths, 1,035 feet run; 15-inch pipe sewer, 114 feet run; 12-inch ditto, 380 feet run; 9-inch ditto, 440 feet run; gully-cesspools, with 6-inch pipe overflows to sewers, 4 in number. Plans, &c., at the offices of the Conservative Land Society's surveyor, Mr. James Wyllson, 33, Norfolk-street, Strand, London, W.C.; also at the offices of Mr. Alfred Allen, Market-place, Newark-upon-Trent. Tenders on or before May 24, addressed to the surveyor, as above, and endorsed "Tender for Works at Newark."

TODMORGEN.—For forming the footpaths from Gauxholme to Winterbitch-bridge, on the Rochdale-road; from Gandy-bridge to Barewice-mill, on the Burnley-road; and from Stanfield-bridge to Lob-mill, on the Halifax-road, in all about 5,700 lineal yards, or 11,400 superficial yards. Also tenders for about 120 lamp-posts, lamps, &c., complete, to be fixed within the before-mentioned districts. Specifications, &c., may be seen, and any further information obtained, at the office of the Local Board, Todmorden, where tenders must be delivered by 2 p.m. on the 22nd inst., addressed "To the Paving and Lighting Committee."

RAILWAY WORK.

INVERNESS AND PERTH JUNCTION RAILWAY.—For the construction of the two remaining sections of the line, viz.:—The Kingussie contract, extending from Kinrara Post-office to the south side of the river Spey, measuring about 13 miles or thereby, comprising about nineteen small bridges and culverts, with a timber viaduct across the Spey. The excavations and embankments consist of about 470,000 cubic yards. The Dalwhinnie contract extends from the south side of the Spey to the boundary of the county of Perth, measuring 15 miles or thereby, and consists of thirty-two small bridges and culverts, and about 430,000 cubic yards excavations and embankments. The rails, chairs, sleepers, spikes, fish-plates, and bolts will be supplied by the Railway Company. Drawings, &c., at the office of Joseph Mitchell, Esq., C.E., Inverness, from whom, or from the assistant-engineer on the line, duplicate schedules may be obtained, at 2s. 2s. each. The line is staked out at distances of every 100 feet, according to the working sections. The deepest cuttings are also plotted to ascertain the nature of the materials in the excavations. An assistant-engineer will be at the County March, near Dalnacardoch, on the 20th May, at 10 o'clock a.m., to accompany the contractors over the Dalwhinnie contract; and at Spey-bridge, near Kingussie, on the 21st, to go over the Kingussie contract, and to point out the works and sites of the bridges. The draft contract proposed to be entered into will be seen with the assistant-engineer, or at Mr. Mitchell's office. Sealed tenders, addressed to the secretary, and marked "Tender for Inverness and Perth Junction Railway Works," "Dalwhinnie" or "Kingussie Contract," as the case may be, must be lodged at his office, on the 28th May, at 4 o'clock p.m.

SEWERAGE, ETC.

NORWICH.—For constructing and repairing sewers, drains, gullies, &c., within the corporate district of the Norwich Board of Health, for the term of three years, from the 24th June next. Specification at the surveyor's office, 24 Castle Meadow, where every information may be obtained. Tenders addressed to H. B. Miller, Clerk to the said Board, and endorsed "Tender for Repairs to Sewers, &c.," on or before the 20th May.

SCHOOLS.

BEOS.—For the erection of a schoolroom and class rooms at Howard Chapel, Bedford. Plans, &c., with Mr. Usher, 30 Mill-street. Tenders by 10 a.m. May 22.

HOSPITAL.

MAIDSTONE.—For the works at the West Kent General Hospital, Maidstone (previously advertised.) Tenders to be delivered at the Hospital before 10 a.m., May 20. (Mr. H. Blandford, of Maidstone, is the architect.)

ABRIDGED SPECIFICATIONS OF PATENTS FOR INVENTIONS.

From the "MECHANICS' MAGAZINE," May 9.

2602. B. TAYLOR. An improvement or improvements in the manufacture of certain descriptions of brace webs. Dated Oct. 18, 1861. Here the inventor proposes to employ woollen or worsted webbing with indiarubber, thereby obtaining more brilliant dyes in wool than in cotton. *Patent abandoned.*

2611. T. FEARLEY. Improvements in steam hammers. Dated Oct. 19, 1861. The patentee forms the steam cylinder annular, in order that the ram may pass through the inner or central part of such cylinder, and thereby have increased guiding surface in its motion, as also to reduce the height of it, and he forms the piston annular, with rods passing through the head of the cylinder to a cross head affixed to or formed upon the ram, or through the bottom of the cylinder direct to the hammer above the head. He also forms the hammer to surround the cylinder, the piston rod being keyed into the hammer just above the head. In this case the cylinder is fixed to the upper part of the framing, and the framing below is bored to receive and guide the hammer in its motion, whilst the inside of the hammer is bored true to slide on the cylinder. He also gives motion to the valves of steam hammers by means of a spiral groove or feather, cut or formed in the hammer, acting upon a pin or stud in connection with the valve or valves. *Patent completed.*

2613. J. MARSHALL. The collection, concentration, and transmission of sound, so as to facilitate the hearing thereof. Dated Oct. 19, 1861. The patentee claims the construction of apparatuses for the collection, concentration, and transmission of sound, in which a combination of reflecting surfaces is employed, which are so formed, and are adjusted in such relative positions, that the rays of sound are received on one or more of these reflecting surfaces, and are thence reflected in a concentrated manner on to one or more other reflecting surfaces, by which they are again reflected in a parallel or nearly parallel manner into a conducting tube, or into several conducting tubes, which convey or convey them to the ear. *Patent completed.*

2614. J. BOURNE and E. KINN. Improved machinery for the manufacture of tubes and cylinders, which is also applicable to other useful purposes. Dated Oct. 19, 1861. To accomplish the object of the invention the patentees construct improved machinery in the following manner:—Any given number of rolls or cylinders having slightly concaved peripheries and bevelled edges are mounted in a suitable frame-work; the said rolls or cylinders, when definitely fixed in a working position, are relatively angular, the effect of which may be stated thus: when the metal or alloys of metal designed for a tube or cylinder is fed in upon an ordinary mandril between the rolls or cylinders for the purpose of rolling to a required length, diameter, and thickness, the combined action of the rolls or cylinders, whose motion

is rotary, simultaneously imparts a spiral motion to the metal or alloys of metal then undergoing the rolling process, so that independent of their agency the metal or alloys of metal is passed through with great speed, and is then introduced and rolled in like manner again until the same is in a condition to be "finished" at the draw bench by the usual method. *Patent completed.*

2615. J. WAINWRIGHT. Improvements in ventilating rooms and buildings. Dated Oct. 19, 1861. This invention is for improvements upon one patented by the present inventor the 20th Oct., 1858, No. 2345, and consists, 1, in perforating the lower bar of the lower sash of window frames, and in fitting over the same, inside the window, a slide made with perforations and solid parts, in such manner that the perforations in, and solid parts of, the slide may be brought entirely or partially over the apertures in the sash bar. Again, in some cases he receives the air in a case or trough, through apertures in the lower sash bar, and carries tubes up the side frames which communicate with the air case; and he provides outlets in the tubes at various levels. *Patent abandoned.*

2631. J. TOWAN. Improvements in machinery or apparatus for bending iron. Dated Oct. 21, 1861. This consists in the use of three rolls (suitably grooved), driven by any ordinary gearing, and so arranged as to impart any desired curve to the iron which is passed between them. These rolls are placed on three shafts, and made to overhang the bearings, each roll being pushed on its shaft endwise, and kept in position by a collar, and driven by a key. Two of the three rolls are made in two halves, so that one half may be removed, and thus admit of the easy disengagement of the hoop when formed. By changing the position of the rolls from one shaft to the other, the feathers upon the angle or T iron may be bent either externally or internally. *Patent abandoned.*

PROVISIONAL PROTECTIONS.

1021. D. Fryer, Carlton-square, Old Kent-road, Surrey, and W. J. Williams, Arundell-street, Strand, gentleman. Improvements in the method of and apparatus for letting on and cutting off the supply of gas to groups or districts of street and other lamps from a central point or depot. Dated April 10, 1862.

1054. J. Bunnett, Deptford, engineer. Improvements in revolving shutters, and in machinery for producing the same. Dated April 12, 1862.

1088. R. A. Peacock, St. Helier, Jersey, civil engineer. Improvements in constructing and working lock-gates for docks, harbours, canals, and navigable rivers.

1091. F. C. Philippson, Munzstrasse, Berlin. Improvements in steam hammers. (A communication.) Dated April 15, 1862.

1102. J. M. Rowan, Glasgow, Engineer. Improvements in manufacturing articles of cast steel.

1114. J. Weston, 80 Upper Whitecross-street, St. Luke's, engineer. Improvements in machinery for mortising, drilling, and dovetailing, and in tools to be used therewith. Dated April 16, 1862.

1125. J. L. Perin, engineer, 97 Rue du Faubourg, St. Antoine, Paris. Improvements in machinery for mortising wood.

1129. K. A. Brooman, 166 Fleet-street, patent agent. Improvements in buffing apparatus and in draw springs. (A communication.)

1135. R. Wedgwood, Barnes, Surrey, gentleman. Improved apparatus for facilitating the saving of life in cases of fire. Dated April 17, 1862.

1139. J. Shanks, Barrhead, Renfrew, plumber. Improvements in apparatus for promoting ventilation, also applicable to drying stoves.

1142. B. Rhodes, Old Ford-road, Bow, Middlesex. Improvements in the machinery for, and in the method of making, as also in the materials to be employed in the manufacture of cylinders, tubes, and other vessels from paper and other materials of fabrics.

1146. E. Loyell, Cannon-street, London, C. E. Improvements in locks and fastenings. Dated April 14, 1862.

1154. J. Pickard, engineer, and T. Morris, broker, Preston. Improvements in furnaces for the prevention or consumption of smoke.

1165. C. C. Creeke, Bournemouth, Hants, architect. Improvement in the construction of drain and other pipes. Dated April 21, 1862.

1196. J. Winsborough, 4 Sanson-terrace, Marlborough-road, Dalston, Middlesex, gas meter maker. Improvements in wet gas meters.

1204. R. Zimara, St. Petersburg, Russia, engineer. Improvements in stoves for heating and ventilating buildings. Dated April 24, 1861.

Correspondence.

1 Old Palace Yard, Westminster,

May 14th, 1862.

SIR,—For obvious reasons, I must decline to enter into any controversy, at the present moment, with those who have instructed Mr. Standbridge to reply to my letter.

Hereafter I shall have an opportunity of explaining very differently what he calls "the facts of the case," as well as the figures he quotes.

Without discussing Mr. Standbridge's lengthened apology, which, if read with care, goes far to prove my case, I must notwithstanding reassert, in the most literal and emphatic manner, my former statements, every one of which I am prepared to prove at the right time and in the proper way.

Inasmuch, however, as the payment to me of £45 has been introduced into this controversy, with which it has nothing to do, I may state that it was for two sets of preliminary designs made more than a year since, and prepared in accordance with special instructions before any estimate was made, and that a portion of the £45 was for travelling expenses connected with these services.

I may also repeat that I have been throughout ready to prepare new plans to meet the exigencies of the case, and that such readiness is not inconsistent, as Mr. Standbridge seems to suppose, with my statement that I could propose no mere alteration or rearrangement of the design then under consideration, to effect a greater saving than I had already made.

In writing to you at all, it was far from my wish to drag your readers into anything resembling a personal controversy, and I am not responsible for the introduction of topics hearing this character; I thought it right, however, that the profession should understand what it was that lurked under the guise of an open competition, and that it was seriously proposed by a municipal body to complete a building half finished by me, and "in accordance with my elevation," and on a plan which I repeat has been copied from one of mine, inasmuch as it shows arrangements which do not exist, except upon my drawings.

EDWARD M. BARRY.

May 15th, 1862.

SIR,—As I am given to understand that the Government bill for the concentration of the Law Courts will be again brought forward, and, like many others, being deeply interested in that matter as an owner of land and house property in the locality selected as the site of the proposed structure, I am induced to apply to you for advice as to the steps I ought to take, in order to ascertain the amount of compensation which I should be entitled to, in the event of the measure in question being carried out, and to prepare and make out my case for the same.

AN OLD SUBSCRIBER.

[Apply to some professional man or firm in the neighbourhood, such as Messrs. Hammond and Kirkland, Carey Street.]

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

W. W. (call at the office); B. and F. (attended to); W. H. (next week); L. L., W. H., G. P., A. W. S., H. B. and B., J. B., T. C. N., W. H., U. N., J. H. H., W. P.

J. V.—We shall attend to the question of Model Cottages for Working Men ere long.

S. S.—Without seeing the design it is not possible for us to advise.

M. N.—Will do well to consult an architect.

W. D.—Opinions differ widely on the point referred to.

L. F.—William of Wykeham was the founder.

T. S.—A mixed style undoubtedly.

** NOTICE.—The BUILDING NEWS will in future be published at 166 Fleet-street, where all communications and advertisements should be addressed.

THE BRITISH MUSEUM.

THE clique interested in the aggrandisement of South Kensington, have received a slight check in the refusal of the House of Commons to pass a Bill for the removal of a portion of the British Museum collections to that favoured spot, which, surrounded by the homes of the wealthy and the great, has come to be looked upon by the "upper ten thousand" as the centre of London, and the most easy of access. To Belgravia and Brompton it is, no doubt, very central; but what is it with regard to the inhabitants of three sides and the true centre of London?—to the inhabitants of something like nine-tenths of the metropolis, and to the visitors to London who are spread over those nine-tenths? Is it really, fairly, and honestly anything but an outlying district, a suburb? Mr. Bouverie has said, in evidence, "the public leave the London streets, cross the park, and soon arrive at the site." Pleasant picture! But the idea intended to be conveyed, applies to those only who live near the park. Let Mr. Bouverie some morning betake himself to—say Islington, where a tolerably large number of *British* people, for whom, as we understand it, the *British* Museum is maintained, reside. Thence let him start for the new centre of London so "easy of access." If he takes a cab he will find it a wearisome journey, and to many it would be a costly one. If shut up in a close-smelling omnibus, he will arrive at the favoured site in a frame of mind scarcely favourable to a day's enjoyment or study; and if he walks, and thousands and tens of thousands who visit the Museum would have to do so, or stay away, he would perhaps arrive at the conclusion that it was a rather wearisome journey through London streets, and a very short walk in comparison, across the park.

It is not unnecessary, once more, to raise a strong voice against the proposal, to take the British Museum to South Kensington, because the attempt has just failed. The subject will be again brought forward before long, and the defeat now experienced, will serve to teach those in command of the movement, the weak points of their late attack, which they will, no doubt, take care to strengthen when the question is revived. We hope that then some other members will be found to support Mr. Seymour, who, it appears, was the only gentleman who on Monday objected to the proposal, on the ground that it would render the art treasures of the Museum more accessible to the comparatively few inhabitants of the West End, and less accessible to the poorer inhabitants of other parts of the Metropolis.

There is no doubt that the present buildings in Bloomsbury are over-crowded, and that additional space is absolutely necessary, not only for the better display of the collections now exhibited, but also for the arrangement of a large collection which is stored away, and cannot be seen at all. But much of this inconvenience might be removed, as we have shown on a former occasion, by a judicious selection, and removal of many objects which really are of no value whatever to the larger proportion of visitors. These might still be accessible to students, in rooms where they could be arranged with much greater economy of space than is possible in rooms frequented by the general public. Besides this, however, additional buildings are required, and the want, daily becoming of more serious importance, has furnished the advocates for removal with an argument for the transfer to South Kensington. But to impart force to the argument it was thought necessary to show, that space could not be obtained contiguous to the Museum, and that the cost of erecting a new Museum at Kensington, including land, would be less than in Bloomsbury. The first consideration was disposed of by saying, that a larger space is required than can be conveniently obtained in the neighbourhood of the Museum; and in favour of the question of cost, it was asserted by the Chancellor of the Exchequer, that there would be a saving of some £300,000 in erecting a new Museum on the Commissioners' estate, instead of enlarging the present Museum. The trustees, who favour removal, have investigated the financial aspect of the question, and arrived at the conclusion that the cheapest ground in the neighbourhood of the Museum would be about £50,000 an acre, and as five acres are wanted, the cost of the ground, at the rate estimated, would be £250,000. The cost of building on the ground when it is secured is estimated at over £100,000 per acre, or £500,000 for covering five acres of land, making a total of £750,000.

The Commissioners of the Exhibition of 1851 happen to possess some land at South Kensington, for which they paid about £5,000 per acre, and as they consider the British Museum to be "an important national institution," they desire to be very generous. To erect a museum on their estate, they offer the land "at a lower price than the market value," or £10,000 per acre, just double the sum they paid for it. In the same report the Commissioners said, that they were anxious "to afford every facility in their power, and feel that they should not deal with the question as a purely commercial transaction." We find it is stated that the site thus available for a new British Museum would cost £50,000 only. The Chancellor of the Exchequer has examined the plans, and is able to give a "conjectural

estimate" of the probable cost of carrying them out; he also finds that the cost of building at South Kensington will be from 20 to 25 per cent. less than the cost of building in Bloomsbury! and therefore sets down the total cost of a new building at South Kensington at £500,000; altogether it is estimated that the cost at South Kensington would be from £670,000 to £680,000, and that the cost of the same operations at Bloomsbury would be from £960,000 to £970,000.

There is something eminently grotesque in the statement, that to erect a Museum at South Kensington would cost, for mere building, from 20 to 25 per cent. less than at Bloomsbury. But so says our Chancellor of the Exchequer, and he gives as reasons, that the style of the buildings in Bloomsbury is fixed by the present structure; at South Kensington "they would be able to employ and distribute the ground without reference to any previous considerations; and it would further be practicable to employ a lighter style of building, with a much greater amount of window space and of glass, which would be both cheaper and more convenient." It is scarcely necessary to point out the fallacy of this argument, unless it be intended to erect fresh "boilers" or "dishcovers," for the reception of the contents of the British Museum. If such is the case, and it is by no means unlikely, we acknowledge it at once, that such a structure would not harmonise with the present building in Great Russell Street, though it might with those at South Kensington. But we would at the same time assert most emphatically, that it would not only cost no more to erect buildings in connection with the present, in strict harmony with them, and even with a "greater amount of window space and glass," but that there would be an actual and large saving, of course assuming the proposed building at South Kensington to have any pretensions to architectural character. We need express no opinion as to the design of our present Museum, as it would not be necessary to reproduce the façade on each side. Architecture has advanced during the past twenty years, and the erection of three façades to harmonise with, though not to imitate, the present, would offer no very difficult problem to our architects.

The present is not the first time we have heard of the plans for this proposed new building. It is assumed that a building is to be erected before the plans are prepared, and we have the Chancellor of the Exchequer telling us that he has seen them, and we also learn that they are sufficiently detailed for estimates—"conjectural estimates"—to be framed. Under whose direction have these plans been prepared, and who takes such an interest in the matter as to ask for plans, before it is determined to erect the building? Does not the existence of such plans, show a strong determination somewhere, coupled with the assurance of influence, to grasp such of our art collections as may be found to want sufficient protection in the public voice?

Architects, too, are not uninterested in the aspect the question has assumed. Who prepared the plans? Is the designer of the Exhibition building to become the architect of all our national works? Have the Brompton boilers served to prepare the public for a series of such erections, in which we are to store our choicest works of art? It is impossible not to see, in the proposed removal of the Natural History Department, another grasp at the art and science collections of the nation.

THE INSTITUTE ON PROFESSIONAL PRACTICE AND CHARGES OF ARCHITECTS.

NOT a few questions of great moment are everywhere settled by common consent. Where there is no other rule laid down or law established, received custom obtains the force of law, especially in cases where matters concerned are obscure or difficult. It becomes therefore of great importance to know exactly the custom settled by common consent, where this vague and often lax rule is appealed to, and especially in questions of nicety and delicacy.

The remuneration of professional men is precisely a case in point. It is not difficult for any one with good sense, and a few facts to go upon, to decide pretty nearly what is a fair price for a thousand bricks, a suit of clothes, or a stack of hay; but where skill, experience, genius, and technical knowledge have to be paid for, the matter is not so simple;—while, from the character and standing of the persons concerned, it is desirable that the risk of disputes and dissatisfaction should be avoided.

On this account, the simple rule of an architect's remuneration by a commission of 5 per cent. upon the outlay which he superintends, having once become general, has been accepted and adhered to as a basis, although it affords most unequal, and sometimes inadequate remuneration. There are, however, numerous cases where this rule is clearly inapplicable, and there is much room for dispute as to what was exactly included in the duties thus paid for. An authoritative statement of the course pursued by the most experienced in their practice, has been accordingly a desideratum, and the Royal Institute

of British Architects has never taken a better or more useful work in hand than the preparation of such a document.

It has been known generally throughout the profession, that a standing Committee of the Institute has been for some time exerting itself to obtain the best information on professional practice, and to place it before the members in the best possible form. After the Committee had laboriously pursued work, then a special meeting of the members was held, to revise and finally sanction it. The result is the Report on Professional Practice and Architects' Charges, which will be found in another column. We believe we are correct in saying that this report, though embodying the most important points on all matters which it was thought necessary or desirable to print and circulate, does not exhaust the subjects submitted to the Committee; and that there are papers lying at the Institute Rooms to which the members of that body can have access, and from which they may derive valuable information.

The usual commission being first-named in this Report, the exceptions to it are subsequently given, the amount of work required to be done for it is accurately defined; and lastly the remuneration for works of a nature not strictly architectural, and which yet fall into an architect's hands, is determined.

The commission on works is a subject which has hitherto received careful examination in this journal.* We have shown that the method hitherto adopted, while very fair to the employers, was very unequal, and consequently unfair to the architect, and it is in cases where this inequality presses heaviest that the exceptions are made. The highest class of design is most properly recognised as exempt from the rule of remuneration by commission; also, very small works, which are known to every architect to consume labour and time out of all proportion to their cost, are similarly exempted. In the one case the remuneration is left to be settled by private agreement, and as the number of persons capable of doing such work is small, nothing else could well be done. In the other case, one which applies to all architects, the legitimate scale of charges is very properly laid down.

This scale has not been universally in use, though it has been long followed by certain architects, and officially recognised, and it will be felt as a relief to many, who, adhering to the 5 per cent. scale, and having many works of small magnitude, have felt the difficulty of their practice, and the inadequacy of their remuneration. It is not at all too high, and will, we hope, be generally adopted.

The case of an employer supplying part of his materials or labour, or of a large mass of old materials being taken as part payment by the builder, is considered and provided against. These conditions usually increase the trouble of the architect, and always diminish the cash paid. It is therefore only just that the value at builders' prices of the labour performed, or the materials supplied or found on the site, should be taken into account on calculating the commission. In the case of replacing, or adding to, or altering old buildings, it is always well, where possible, to make the contractor send in two estimates, one stating the cost of the work if the old materials become his property, and the other stating the cost if executed entirely of new materials, the old being sold to independent parties. The latter estimate would, of course, be the proper basis for commission.

Besides travelling expenses, the employer is chargeable for time consumed, where the distance of a work from the architect's place of business is unreasonably great; and for special services such as sometimes grow out of a building, but are really no part of the duties incident to executing works or preparing plans for them. These special services will be found enumerated in the report, and include negotiations as to site, party walls, lights, a *detailed* estimate beforehand, alterations of a material nature after the plans are complete, and measuring up extras and omissions.

It should be noted that these changes are many of them *permissive* and not obligatory. It is unquestionably unfair for an architect to carry out architectural works of an ordinary character for less than the usual remuneration, or for no remuneration at all; and this we believe is universally admitted by all respectable practising architects, and the reasons for it are very easy to understand. It may not, however, be equally clear why there may be any variation allowable in the rates charged above 5 per cent. The truth is, however, that these rates are very much questions of professional standing, and that although there is a standard below which it is not right for individuals to go, there is no necessary obstruction in the way of those who, believing or knowing themselves to be capable of doing better things than the majority of architects, consider it fair that they should be better paid.

Extra payment for time consumed in travelling deserves a moment's consideration. No architect is bound to demand it, and a young man, or one of small standing, if employed on distant work, would in many cases be unwise, and in some unjust, to think of demanding it. But if

people far off in the country require the services of the best talent that the metropolis can afford, it is but reasonable that they should pay something as a remuneration for the time actually lost by a professional man who, had he not been journeying, might have devoted the hours spent in the railway to profitable pursuits at home.

Similarly, the charges for designing monuments, stained glass, furniture, and the like, secure in many cases an excellence that perhaps only one hand in the United Kingdom can bestow, and it will be conceded by every one that such services deserve every encouragement and ample remuneration.

There are other portions of the report before us which deserve consideration, namely, those charges which are reckoned *below* 5 per cent.; the statement of the duties of an architect, the ownership of drawings, and miscellaneous services. It is interesting to compare the report now before us with two scales of professional charges issued by architectural societies, that of the Scotch architects and that of the Northern Architectural Society. Both of these scales have appeared in our columns, and the fact of their having been prepared and published shows how desirable it was that the document now under consideration should be prepared and issued under the best possible sanction.

INTERNATIONAL EXHIBITION.

THE PICTURE GALLERIES.

THE first question asked by persons who have not seen the pictures at the International Exhibition is, "How does the English School stand in comparison with the schools of the Continent?" The answer on a general view of the whole collection will be most satisfactory to our national self-esteem. Even after the eye has been accustomed to the foreign pictures for several days, those by native painters suffer little by the comparison with regard to art generally. The process by which this comparison is established, being the careful examination of upwards of four thousand works of art, with the necessary exertion of memory, is not a task very easily accomplished, and becomes exceedingly difficult in consequence of the pictures from the various countries of the Continent not being placed in the regular order of the catalogue, those of each country not being arranged together; and in many instances one picture by a certain artist will be found in the principal room, while the rest of his works are scattered through the side gallery. In this absence of classification, a complete conception of the whole is rendered impossible, and must be accepted as our excuse for irregularities which may arise in the course of the criticisms we intend to make, and the comparisons it will be our endeavour to establish. Such a collection of pictures as we now have in the galleries of the Exhibition, was the deficiency of the first Great Exhibition of 1851. That, however, without pictures, was a glorious success. The present Exhibition without pictures would have been a failure. The first was the spontaneous effort of an enterprising nation, sustained to completion by hearty good-will and enthusiastic cooperation; the present is the deliberate calculation of a party, and carried on amid divided interests and antagonistic councils.

One half of the space devoted to pictures, drawings, and engravings is occupied by works of the British School, the other half contains all the paintings, drawings, cartoons, and engravings sent for exhibition from the Continent. The collection of the English portion of the building illustrates our art from Reynolds, including examples of all the painters of that period down to those of the present day, whose works may be now also seen in the annual exhibition. The selections by the Continental authorities seem to have had no retrospective purpose, and are confined chiefly to living celebrities. Those who are tolerably well conversant with art, both in England and on the Continent, will no doubt be impressed with the idea that a general arrangement has been assented to and acted upon in the choice of pictures to be exhibited, both from abroad and on this side of the Channel; we allude to the evident absence of all eccentric productions as nearly as possible, and the eye passes along the whole range of the two galleries, both foreign and native, without meeting with a painting in a style which presents the slightest difficulty to the art-student. Turner does not blaze out in mystic splendour on the walls of the British Gallery, while on the French side Ingres and Delacroix are represented by a single picture each, and that the least peculiar of their known works. If this has been intentional, and in the interest of art, great praise is due, because sufficient mischief has been done to the public belief and judgment in art; as much by absurd conceits and "sensation" pictures, as by writings which have directed so much general attention to them.

Another remarkable feature of the Exhibition is that France has not put forth her strength. She certainly does not take the important position she is entitled to, and her powers in the higher department of art are rather indicated than represented. Hence an opinion has become general that French painters are scarcely equal to our own native artists. This is an error. On the present occasion she seems to have thought it more fair to meet us as nearly as possible on our own ground; but it must not be forgotten that a branch of art has been withheld—the profane and sacred historical—which would have not only covered our walls with fine painting, but our patrons of art with shame. In the British division of the gallery, we have historical and religious subjects by Cross, Hilton, and Maydon. The first has recently died wanting the necessities of life; the second would have probably paid the same penalty of a laudable ambition, had he

* See "Building News" for October 21, 1859.

not been made Keeper at the Royal Academy; and the last, after suffering poverty for some years, besides being imprisoned for debt, and living on charity, took his leave of the patrons of historical art by self-destruction. How it happens that our painters employed to decorate the palace at Westminster, have not come forward to vindicate the honour of the country, as regards historical painting, we think requires explanation. The Belgian contributors have not been so merciful to us as the French, for the paintings by Gallait are the finest works in the whole collection.

It must not, however, be assumed that, because the pictures sent from Paris do not strike at first sight, that there are not among them many examples of the elegant and imaginative branches of art to which we cannot produce satisfactory parallels; nor that, because the walls are not covered with high and sacred art, no attempt has been made to represent it. On the contrary, each class of subject seems to present itself in calm defiance of and patient confidence in the result of the comparison that may be made. The champion of the grand style will be found in a large picture by Auguste Bartholémy Glaize, bearing the ill-chosen title to Englishmen of "A Pillory." The word in French, by a free interpretation, means a display of great men. As an example of the large style of art, we have no painting that can be compared with it. Beneath it, on the right on entering the French Gallery, hangs "The Annunciation," by Amaury Duval, which for elegance of drawing, elevated delicacy of tint, and graceful composition, with a delightful sentiment of refined religion, the English School possesses no painter who could approach it. For poetry of tone and delicate gradations of tints, we cannot match the picture entitled "Francesco D'Assisi." As regards effect, finish, and the charmingly imaginative, where have we any work equal to "Illusions Destroyed," by Charles Glaire? Nowhere. The same answer must be given to a similar question respecting the solemn dignity of "Marie Antoinette passing from the Tribunal after Condemnation," by Paul Delaroche; and also as regards those small but beautiful and expressive pictures in a very low tone of colour, which hang close beneath it. Of the same kind, and equally poetic in treatment, is "The Procession to Calvary," by Armand Leleux. On the opposite side of the room is a landscape with which we have nothing to compare for classical treatment and balmy repose. It is by Charles F. Daubigny, entitled "The Banks of the Oise;" and of the perfectly ideal and elegant "My Sister is not Here," by Hamon, we have no counterpart. We are now giving merely a glance round the galleries, but shall go more fully into the merits of the pictures in future notices.

The German artists have sent several pictures which are entirely beyond the powers and above the aim of English painters. "The Holy Family," by Carl Müller, a picture painted in the most lovely manner, is one of them. The severity of the drawing is not quite so distinct as in the circular compositions by Raphael, at the Earl of Ellesmere's; but every part is extremely graceful and beautiful. A large gallery picture of "Nero after the burning of Rome," by Carl Piloty, is painted in a grand style, and the whole is finely conceived. "The Three Marys on the Morning of the Resurrection," by Carl Peschel, is excellent in tone as regards the subjects, and although very admirable, it is possible that Mr. Dyce would approach it should he attempt the same subject. "The Death of Nicolo, King of the Obotrites," by Theodor Schloepche, is finer as a whole, figures and horses taken together, than any artist we have could paint. "The Raising of Jairus' Daughter," by Gustav Reichter, if not absolutely grand, is composed with expressive simplicity, and is scientifically coloured.

Compare the two pictures by J. Israels, a Dutch artist—"The Shipwrecked" and "The Cradle"—the former painted in that sombre and monotonous style so well suited to the subject, and the latter, a most brilliant effect of sunlight on the figures, with the sea melting into aerial mist and space. Where, let us ask, is an English artist who ever thinks of painting from palettes so differently regulated, according to the sentiment of the subject?

The Swedish School sends us the works of two female painters, which we do not think our Society of Female Artists could equal. There is a refined delicacy and skilful arrangement in "Meditation"—a lady reading in an elegant boudoir—by Jeannette Möller; and "A Mother with her Child," besides two other clever pictures, by Amalia Lindgren. Another example of the change foreign artists made in their style of colouring, in accordance with their subjects, may be seen in the pictures by Frederick Hickert; and the Norwegian painter, Tideman, is not easily excelled in his humble and religious ceremonies.

Of the Danish School, we have a classical scene from the "Andria" of Terence, by Abildgaard. The collection from Russia is very interesting. In it we find, among the higher order of art, a rather pre-Raphaelite "Virgin and Infant Saviour," by Theodore Bruni, but graceful and well painted; and a fine picture, of gallery size, of "Jesus and Mary Magdalene" (noli me tangere), very classically and elegantly treated, and the event as expressively illustrated. Taking this work, by Alexander Ivanhof, as a whole, we do not know an English painter who could equal it. In domestic pathos, with admirable execution of accessories, "The Widow," by Paul Fedotof, we have seldom seen excelled, and we should be happy to see the feeling and propriety of treatment in "The Peasant Girl receiving the Holy Communion," by Alexis Venezianof, more frequently displayed by English painters.

The Belgian School, as we have said, is the great point of interest, in consequence of its exhibiting the two wonderfully dramatic pictures by Gallait—"The Last Moments of Count Egmont" and "The Last Honours paid to Counts Egmont and Horn." There are, besides, several other pictures by the same artist, which make that side of the Belgian room

remarkably effective and attractive. This room is further enriched with pictures by Leys, relative to the history of the Netherlands and the Reformation; numerous productions by Madou, the Wilkie of Belgium, of a very amusing description; two fine pictures by Pawels; a very impressive subject, by Slingenev, of "A Martyr in the days of Diocletian" about to be torn to pieces by wild beasts; and some large cattle pictures, by Verboeckhoven and L. Robbie.

The Spanish painter, Antonio Gisbert, sends a picture full of fine sentiment, entitled, "The Execution of Padillo, Bravo, and Maldonado;" and a small, but highly scientific one, as regards arrangement of tone, representing "The Death of Don Carlos" (son of Philip II.), and "Queen Joanna embracing the Coffin which contained the Body of her Husband," by Gabriel Maureta.

Italy exhibits no painting of importance, except "The Taking of Jerusalem," in which there is much elegant drawing and treatment; but there are some fine large drawings in pen and ink from the "Inferno," "Purgatorio," and "Paradiso" of Dante, quite original in conception, and most elaborately, as well as very gracefully composed.

We have now briefly directed attention to the chief points of the foreign schools, in all of which we find either superiority in choice of subject, imaginative arrangement in accordance with the sentiment of the scene, or refinement in the general treatment, and all of which we should be happy to see the English School make some attempt to emulate. But it must not be supposed because, according to the rules of politeness, we give priority of consideration to the stranger, that in our next number we shall not be able to show in what the English School excels those of the Continent, if not in those of the present day, at least in the productions of the great English masters—the fathers of British Art.

ROYAL ACADEMY.—ARCHITECTURAL DRAWINGS.

THE reflection recurs to us, as we again look upon the architectural drawings at the Royal Academy, that a union of the works here exhibited with those displayed in Conduit Street, would united constitute a creditable exhibition of architectural art, and convey a fair, although by no means a full, idea of what has recently been executed or projected by English architects. Divided as architects have been since the establishment of the Architectural Exhibition, some twelve years since, it is with difficulty that we can compass their aggregate importance. We cannot but remember also that a considerable number of drawings reserved for this more aristocratic gallery are annually returned to teach a lesson to their disappointed owners, instead of being hung for the instruction of their professional brethren. It is then too late to send them to the Architectural Exhibition. Between the two Galleries, many works "go the wall" in the offices of their respective owners. We must be contented, in the words which adorn the title page of this year's Catalogue, "to make up our idea of perfection from the excellences that are dispersed" over the several Galleries—in Conduit Street, South Kensington and Trafalgar Square, and banish all expectation of finding it exclusively in either locality. The International Exhibition has a goodly show, but they are chiefly gathered from former exhibitions. The superior attractions of the Royal Academy have likewise influenced our architects, and renders it easy to account for the poverty so conspicuous at Conduit Street.

The post of honour is deservedly occupied by a large and brilliant drawing of Mr. Page's Design for Blackfriars Bridge. It consists of three iron segmental arches with pierced spandrels, supported by red granite piers. Works of sculpture surmount the piers. The abutments are pierced by single rusticated arches, which hardly correspond with the general character of the bridge. The lines of the bridge are grand in the extreme, and the ornament surrounding the coloured shields in the spandrels most judiciously introduced. If erected as here shown, it will far surpass anything which has hitherto spanned the river. What, however, is meant for its crowning decoration, is, as here placed, its greatest defect, and, if persisted in, will tend to mar its entire appearance. We allude to the colossal groups of sculpture upon the piers. They are represented as facing the river. From the bridge, therefore, their back views must be simply uninteresting. Moreover, towering above the horizontal line of the bridge, they break it at regular intervals in the most unpleasant fashion and unnecessarily disfigure this its principal feature. This bad arrangement is the more to be regretted, because it could so easily have been rectified. We admit the appropriateness of sculptured groups, but why, we ask, were they put upon the bridge to stand bulkily against the sky? They destroy the fine stretch of line which links shore to shore, and, so placed, are further removed from the river passengers, without being, even in themselves, of interest to the people on the bridge. They could just as well be fixed *in front* of the piers, the pale red colour of which would then form a charming background to them; they would then enrich what is now too plain, be nearer the eye of all possible spectators and leave in calm repose the splendid outline of the bridge which they now so rudely intrude themselves upon.

Leaving the projected improvement in the appearance of the river, which is likely soon to be realised, we come, in 889, 890, to two "Studies relative to the Embankment Question," by Mr. Newton, which are of a speculative character. The author's notion is to avoid all interference with private property. He views the embankments as Government estates, upon which stately buildings, after the style of Somerset House, might, in course of years, be erected; and he forms in the rear of the embankments open docks, so as to communicate with the different wharves. After Mr. Cowper's explanation of the Government's intention, there is not much

chance of Mr. Newton's design being realised. Mr. Charles Henman (834) treats us to a somewhat similar idea; but, instead of palatial buildings, he shows fire-proof warehouses on the banks, relieved by glazed promenades, and the author's "system of street architecture, in accordance with the requirements of the age," which altogether strikes us as being even uglier than the present aspect of the shores.

A conspicuous drawing is exhibited, by Captain Fowke, of the "Industrial Museum of Scotland," 892. To say that it is better than the International Exhibition is not, perhaps, saying much. The style is that of an Italian villa magnified. In fact, there is a villa hanging near it, by Mr. Masey, 885, which, although in size not one-quarter of it, is in design infinitely greater. The characteristic of the Museum is that of all Captain Fowke's work—swollen littleness. We see that, although designed by Captain Fowke, it is erected under the *superintendence* of a local architect. We think it a pity that they did not exchange their relative duties. Edinburgh might then have been able to boast of a finer building, and London, at the same time, have escaped the infliction of an uglier one.

Mr. Godfrey Sykes shows the first sketch for filling the blank arcades in the Cromwell Road with mosaics. Groups of figures, illustrative of arts and manufactures, shaded in sepia, are introduced within grey and red bands. In the heads of the arches the raw material connected with each subject is depicted. The designs are exquisitely drawn and coloured, but they would as fitly be attached to a brick-kiln as to that grandly gloomy front. There is only one appropriate way to destroy its blankness, and it is, moreover, one peculiarly suited to the business instincts of the Commissioners—that is, to let the series of arcades for advertisements. People would then stop to look at it, and the commercial success of the scheme would gladden the hearts of Commissioners who have shown such aptitude for creating rights, and selling them.

Mr. Newton has a "Study relative to the Composition of the Vertical Lines of an Obelisk, and the Horizontal Lines of a Bridge." Since it was prepared, the obelisk fever has subsided; but we may remark that in this bird's-eye view no horizontal line is seen at all, and that the lines of the obelisk compose chiefly with the curved lines of the trees behind them. The design, however, is not the less good because of Mr. Newton's incomprehensible description of it.

A "Proposed Memorial to the late Prince Consort for Newport Church, Isle of Wight" (853), by Mr. F. Mew, is an artistic mural monument, conceived in a true Gothic spirit, but free from the fetters which too frequently cramp the action of the revivalists. It is, moreover, highly creditable to a provincial town that they have preferred a design of this kind to the stereotyped editions of dull marble statues by second-rate sculptors. The memorial is placed between two windows, which are bordered with encaustic tiles bearing the royal cipher. The windows are appropriately filled with stained glass. In the spandrels of the windows, enclosed by ornamented quatrefoiled circles, figures of angels holding inscribed bands are incised. The incisions are filled in with black plaster, after the fashion of the Italian *intagliata* recently introduced into several churches by Mr. Butterfield and Mr. Street. A canopy is placed between the windows. It is supported by marble shafts of different colours resting on corbels, and is tastefully, if not expensively, enriched. A carved head of the Prince, in relief, is seen in the arch; an inscription occupies the space between the shafts. A band, bearing a Biblical motto, stretches from side to side under the whole composition. It is stopped at the ends by carved angels, which, we think, the architect might in execution very wisely dispense with, or else incise them, as he has done those bearing the upper mottoes.

A design for the same subject by Mr. Bellhouse (842) is hung too high to be properly examined. It looks more like a factory chimney in the rear of an Italian town-hall than a Christian monument. Of other memorials we have one of 1851 by Mr. J. Lewin (841), which resembles Scott's monument at Edinburgh; and another of the same subject by Mr. H. S. Legg, which we have seen exhibited before. It is in three stages, with lions and figures at the angles, and statues of the Queen and Prince Consort on the summit. Mr. F. P. Cockerell sends a masterly restoration of the Street of Tombs, Pompeii. It represents a funeral procession issuing from the gates, and the mountains above Salerno in the distance.

Mr. Teulon exhibits a memorial to William Tyndale (859), a well-proportioned, simple, and imposing grey pile, with bands of brown stone occasionally introduced into it; Mr. M. Digby Wyatt, the granite monument placed over the grave of the late President of the Institution of Civil Engineers, in Kensal Green Cemetery; and Messrs. Tallis and Perron the fine tower which was, on the suggestion of J. J. Rogers, Esq., M.P., most judiciously substituted for the monumental column to Sir H. Davy's memory at Penzance.

One of Mr. Street's customary etchings (878) represents the interior of the church of St. James' the Less, Westminster, as it has been completed. In 843 we have a design for Christ Church, Pentonville, by Mr. Brock, which has evidently been founded upon the exterior of the same church. But with a hazy likeness in its general design there is unfortunately none in the details. There is a want of breadth in the whole composition, and the lower gables over the arches of the tower are a palpable mistake.

Mr. H. E. Kendall, jun., displays upon an ostentatious scale an extensively got-up design for a mansion "in the old English style now erecting." It contains a profusion of barge boards, gables, chimneys, and dormers, grouped together with considerable skill, but there is an evident want of taste in the exaggerated forms and dimensions of the detail. Moreover, if we mistake not, the whole thing, as regards its half-timbered "old English" style, is a huge sham. We cannot conceive a gentleman insane enough to dwell within wood and lath and plaster walls, when possessing

the means so elaborately to ornament them. It is *venerated with*, not *in* the old English style, and is wanting in the true principles which guided the middle-age builders. As a specimen of imitation it is as clever as a piece of wall-space lined and drawn to resemble stone might be made, but it sinks beneath the level of art and of "the old English style" altogether.

844, Hawkeyhurst, Hants, is a far more genuine design. The high pitched roofs and gables, turrets, chimneys, and bay windows are here introduced with a thorough appreciation of their value, and the true artist is seen in the way in which the red color of the brick chimneys is, by means of diapers and bands of roof tiles, made to harmonise with the cool grey stone of the walls.

The "Design for an Exchange for a large Commercial City" (845), by Mr. Watson, received, we believe, the gold medal of the Royal Academy. The geometrical drawings and plan are hung in Conduit Street. It is highly creditable as the work of a young architect, and the upper stage of the tower is a feature of singular beauty. Mr. Phené Spiers contributes several talented studies of old French buildings; Mr. Cole, a fine view of Antwerp Cathedral; and Mr. Johnson, some drawings of Westminster Abbey. The "Design for the Palais de Justice at Brussels" (876), by Mr. Kerr, is in the severer Roman style, with a colossal dome rising in the centre of it. The late Sir Charles Barry is represented by his design for the Halifax Town Hall, now in course of erection, with modifications by his son. The proportions of the façades indicate the ripe scholarship of its distinguished author, but the upper portion of the tower—shaped like an obelisk—is no ornament to it, and of very little use, since it serves only to conceal the stairs which lead to a balcony near the summit. The "Shooting Box," by Mr. E. M. Barry (893), is scarcely more than a box with rectangular apertures and a high roof. Mr. Gray's "Design for Houses in Gore Road, South Kensington" (894), is an extension of the well-known style which he has adopted in the neighbourhood of Covent Garden. The "Dwelling House at Wantage, Berks," by Mr. Brooks (832), is a red brick building, with bricks laid herring-bone fashion in the arch heads over the windows. This style of work is all very well occasionally used as a contrast to other detail, but a repetition of it throughout the building shows poverty rather than fertility of invention. With a profusion of cuspings and jagged pinnacles, Mr. Smith has composed his "Design for a Memorial Church at Hertford" (835). Mr. Manning's "St. Olave's, Ramsay" (838), is the drawing from which the photograph was taken which hangs at the Architectural Exhibition. Mr. R. W. Edis, in a couple of views, shows a simple but clever "Villa Residence at Uxbridge" (836, 837). Equally clever, and in a similar style, is the selected "Design for Rugby Cemetery" by Mr. Bidlake (846), but the same architect is hardly so successful in the "Design for the New Markets at Chester." "The Church of St. Charles Borromeo" of Messrs. Willson and Nicholl has afforded them an opportunity of producing two spirited etchings, but they are too slightly dashed in to enable us to judge properly of the design. Mr. Ashpitel's "New Church, at Sutton, Kent" (847), is based upon a good model. It appears, in fact, more like the restoration of an old church than a design for a new one. The weak point is the bell turret, which no one would possibly take to be other than a modern work. Mr. Sang's first prize design for covering the Merchants' Area of the Royal Exchange deserves examination, on account of the excellent and artistic manner in which the desired object is achieved.

Mr. Goldie's originality has full scope in his St. Wilfred's R. C. Church, York (855), but, as is too frequently the case, it betrays him into exaggeration. This is plainly seen in the deep splay over the shallow plinth of the tower, and in the slender columns, placed one over the other, without even a string intervening between them. It is original, certainly; but that is all we can say for it, if we do not add, that it is also unmistakably ugly. From the fact of Mr. J. P. Jones exhibiting a second time his design for a cemetery (856), he evidently has a higher opinion of it than anyone else is likely to entertain. A very clever Italian villa design (858), by Mr. J. Giles, has likewise been already noticed by us, in the Conduit Street Gallery. It is to be regretted that the design for the Hull Town Hall, by Messrs. Masey and Evers (860), was not sent to the Architectural Exhibition, where so many of the competition designs are hung. It is Italian, with tower in the centre, and steep square roof over the wings. The three-quarter columns tacked on the front, between the windows, are worse than unnecessary. With that exception, the design is a very good one. Mr. George Godwin's "Bailiff's House and Stabling" is, we fancy, an old design.

873 is a suggestion, by Mr. Naden, for relieving the present crowded state of the metropolis. It is most elaborately worked out, but there are numberless obstacles to it, which have been conveniently or innocently ignored. A railway is proposed to be suspended in the centre of the street, with a roadway between it and the present thoroughfares.

We cannot do more than briefly direct attention to Mr. Tarring's Jacobin design for a gentleman's mansion (884); to the four colossal trees which fortunately conceal the major portion of Mr. D. A. Deane's "New Building to be erected at Christ Church College, Oxford"—(if it be no better than it is here represented by Mr. Pollen, we fervently hope that they may always be sufficiently leafy to conceal it); to Messrs. Pritchard and Seddon's brilliantly decorated organ, now in the International Exhibition; to Mr. R. P. Pope's simple, but highly effective design for St. Bartholomew's Hospital, at Chatham (898); to the house of Mr. Wilkinson (899); to the stained glass of Mr. Seddon and Mr. A. O'Connor; and, lastly, to the able manner in which Mr. Digby Wyatt has welded the interlaced work, and the distinctive features of old Irish architecture to the houses in Grafton Street, Dublin (900).

GAS APPARATUS AT THE INTERNATIONAL EXHIBITION.

TO describe the improvements effected since the first Exhibition in 1851, in the manufacture of illuminating gas, is easily accomplished. For the information of some readers, it may be useful to mention, that the gas now burned for lighting all towns in Great Britain and Ireland is exclusively made from coal. Cast-iron or fire-clay vessels, called retorts, are heated to redness by furnaces fired underneath, in which state coal is introduced into the retorts, the heat of which causes gaseous vapour to be driven off. This volatile matter is cooled by being passed through pipes connected together in the open air, when tar and ammonia water are condensed. To render the gas fit for use, all that is now necessary is to remove its two worst impurities, carbonic acid and sulphuretted hydrogen, which can be economically done by hydrate of lime. When coal has been subjected to heat in a closed vessel from four to six hours, all the useful gas is removed, and the residuum of the coal left is changed into coke, which is extracted and cooled by water. Gas made in this manner would be a fair average of the quality generally supplied. All improvements should at least either conduce to something appreciable, such as goodness, cheapness, &c.

Nothing better illustrates the alteration effected during the past decennial period than the number of exhibitors of fire-clay gas retorts. This has arisen through iron retorts being discontinued in almost every town exceeding ten thousand inhabitants; consequently, now fire-clay gas retorts are an important feature in the building. Through having had the opportunity of seeing many of the retorts before the opening of the Exhibition, it could not escape observation that many are made of the finest ground clay, and unfit for practical use. The object being to give the outside of the retorts the smoothness of marble, and the inside the fineness of grain of loaf sugar. To accomplish their purpose, some of the manufacturers have entered on the cost of making and burning nearly a dozen retorts to secure a single sound one. All, however, have not succeeded in doing this, as in one a long crack may be discovered painted over with many words; in another, the perceptible flaw is hid by being placed against a heavy article which would take several men to move. Why endeavour to show goods what they are not?

In order to make a serviceable fire-clay gas retort, such as will stand drying and burning without cracking, it is necessary to mix with the ground fire-clay some broken up brick previously burnt. But this mode would cause the material of the retorts to have the consistence of mortar made with unscreened sand. Clay for fire-brick work should contain no lime, magnesia, or iron, on account of these substances being quickly affected by heat. The slate clay from the coal series is employed in England. At the termination nearly of the machinery department, Western Annexe, there are some comparatively enormous pieces of burnt fire-clay goods for gas purposes, &c., surpassing in size anything exhibited elsewhere. This part is Belgian, the manufacturers being Monsieur Th. Boucher, who obtained a medal at the last Exhibition, a Monsieur A. Keller, and others. In Class III., Messrs. Cowey, Blaydon-Burn, show as well as they can in a corner two beautifully made gas retorts, manufactured from the Newcastle clay. Here also Messrs. William Stephenson and Son have a stall; their retorts look well, but they are thickly coloured with bone ash; the same may be said of Messrs. Clift and Son's patent enameled retort made from Wortley clay, the quality of which is probably as good as it appears; but goods of this description certainly should not be artificially whitened all over.

In Eastern Annexe, Class I., may be seen a very good D-shaped retort of Stourbridge clay, manufactured by Messrs. John Hall and Co. A stall of Mr. Addison Potter contains a beautiful little model of seven fire-clay D gas retorts, set under a double furnace, fixed complete with mouth-pieces and ascension pipes—such as are in general use in gas-works. Messrs. Harper and Moore likewise show diminutive models in fire-clay for the distillation of coal gas. There is also to be viewed in Class I. a six-bed of Walcott's patent gas retorts, erected full size, together with explanatory working drawings, being exactly similar to two settings now working at the "West London Junction Gas-Works." These patent retorts have both their sides solid, which permits either the top or floor to be cut out and renewed when necessary; thus a setting of several patent retorts may be effectually repaired from time to time so as to last very many years. Several other advantages over the common mode is stated to be obtained by this invention. Managers of gas-works should note this for one of their objects for inspection when visiting the Exhibition. Some of the manufacturers show on their stalls samples of the fire-clay as raised by them. One has three different kinds: the first is described as best glass house pot-clay; the second as best black crucible clay, used for making melting-pots for brass, malleable iron, &c.; the third, as second black crucible clay, for making melting-pots for brass, malleable iron, &c. No chemical analysis of their fire-clays is given by Exhibitors from any part; this omission should be rectified on the next occasion. About two parts of silica to one of alumina forms the base of the best fire-clays; when the silica exceeds this proportion, as in the South Wales fire-clay, it is insufficiently plastic, and when alumina exists in a larger degree it is less refractory to fire.

Returning to Class X., the attention of persons residing in single country houses cannot fail to be attracted by the pretty show of coal gas apparatus. At the last Exhibition there were several modes shown for making oil gas, under the fancy names of vegetable gas, &c.; now not one is to be seen. "The Journal of the Board of Arts, &c.," Upper Canada, mentions "that the Canadian department at the International Exhibition should be illuminated with gas manufactured from Enniskillen petroleum (rock oil), and

Mr. J. E. Thompson of Toronto will send one of his portable petroleum gas-retorts, with purifiers and gasometers complete for this purpose." So far from this prediction occurring, not even a single bottle of this rock oil can be seen in the Canadian departments, on account of the Exhibition authorities refusing to allow what has been sent to remain there; fearing doubtlessly of incurring increased risk of fire. This oil requires to be purified and deodorised by sulphuric acid and alkalis before being used in lamps. A gallon of oil, price 1s., may be fairly calculated to produce 100 cubic feet of gas, which is 10s. per 1000, exclusive of labour, furnace fuel, &c. Where expense is any object it can never compete with coal for gas purposes.

(To be concluded in our next.)

PROFESSIONAL PRACTICE AND ARCHITECTS' CHARGES.

A MEETING of members only of the Royal Institute of British Architects was held at the Rooms, 9 Conduit Street, Regent Street, on Monday, the 12th inst., to reconsider the resolutions respecting professional practice and charges of architects; Mr. OWEN JONES, Vice-President, in the chair.

It was moved by Professor DONALDSON, seconded by Mr. STREET, and unanimously agreed to, that the paper of professional practice and charges of architects some time ago forwarded by the council to the members be confirmed and adopted. The following is a copy of the paper referred to:—

"The usual remuneration for an architect's services, except as herein-after mentioned, is a commission of 5 per cent. on the total cost of the work executed from his designs; besides which, all travelling and other incidental expenses incurred by the architect are paid by the employer, who is also chargeable under certain conditions, as hereafter mentioned, for time occupied in travelling.

"But in all works in which the art required is of a high kind, and the expenditure mainly for skilled labour and not for materials, as e. g. in designs for the furniture and fittings of buildings, in their decoration with painting or mosaic, for their sculpture, for stained glass, and other like works, the architect's charge is not made by way of commission on the cost, nor does it depend upon the time employed in making the design, but is regulated by special circumstances, and varies according to the skill and artistic power of the architect.

"A commission of 2½ per cent. is to be charged upon such works as sculpture, stained glass, and others of a similar nature, for which the architect does not give the design, but arranges with the artists or tradesmen, and directs the work generally.

"In works under £500 in amount, 5 per cent. is not fairly to be considered as remunerative, and in such cases it is just to the employer as well as to the architect, to charge by time or by a scale, varying from 10 per cent. for works under £100, to 5 per cent. on amounts above £500.

"The commission is reckoned upon the total cost of the works, valued as if executed entirely by labour and of new materials provided by the builder.

"The commission is to be charged upon the whole value of the work executed, with the addition of 2½ per cent. upon any omissions. This is exclusive of the charge for measuring extras and omissions.

"The architect is entitled during the progress of the building to payment on account at the rate of 5 per cent. on the instalments paid to the builder, or otherwise to half the commission on the signing of the contract, and the remainder by instalments as above.

"All travelling expenses are to be charged extra.

"These rules suppose the work to be executed within an easy distance of the architect's office; but if the work is executed at a considerable or inconvenient distance from it, an allowance beyond the 5 per cent. ought to be made for the time occupied in travelling, in addition to the actual expenses.

"The percentage does not cover professional services in connection with negotiations for site, arrangements respecting party walls, or right of lights, nor services incidental to arrangements consequent upon the failure of builders whilst carrying out work; but all such and similar services are charged for in addition, the basis for charge being the time employed.

"Supposing that the employer, after having agreed to a design, and having had the drawings prepared, should have material alterations made, an extra charge may be made according to the time occupied.

"If the architect should have drawn out the design complete, with plans, elevations, sections, and specification, ready for estimate, the charge is half the usual commission above named.

"If the architect should have, in addition, procured tenders in accordance with the instruction of his employer, the charge is half per cent. extra to the above.

"For works in the alteration of premises, the remuneration may be increased according to the time, skill, and trouble involved.

"All of the following requirements for the buildings are included in the ordinary charge of 5 per cent.:

"Preliminary sketches.

"Working drawings and specifications sufficient for an estimate and contract.

"Detailed drawings and instructions for execution.

"General superintendence of works (exclusive of clerk of works).

"Examining and passing the accounts (exclusive of measuring and making out extras and omissions).

"No additional remuneration is due for making such a rough estimate as

may be obtained, for instance, by cubing out the contents. If a detailed estimate be framed, additional remuneration is due from the employer.

"An architect is bound, under the 5 per cent. charge, to provide one set of drawings and one set of tracings, with duplicate specification; it being understood that the architect is paid for the use only of the drawings and specification, and that they remain the property of the architect.

"The charge for taking a plan of an estate, laying it out, and arranging for building upon, should be regulated by the time, skill, and trouble involved.

"For actually letting the several plots (in ordinary cases), not exceeding a whole year's ground rent may be charged.

"For inspecting the buildings during their progress (so far as may be necessary to ensure the conditions being fulfilled) and finally certifying for lease, the charge should be a percentage not exceeding half per cent. up to £5,000, and above that by special arrangement.

"All the above fees to be exclusive of travelling expenses, and time occupied in travelling, as before mentioned.

"The charge for the above does not include the commission for preparing specification, directing, superintending, and certifying for the proper formation of roads, fences, and other works executed at the cost of the employer, nor for putting the plans on the leases.

"The following definite charges are recognised for valuation of property:—

"The charge throughout is 1 per cent. on the first £1,000, and half per cent. on the remainder up to £10,000. Below £1,000 and beyond £10,000 by special arrangement. These charges do not include travelling expenses, nor attendance before juries, arbitrators, &c.

"The charge per day which may be made by architects, depends upon their professional position, but the minimum charge is three guineas per day.

The charge for dilapidations, when estimated, is 5 per cent. as estimated, and in no case less than £2 2s.

"It is not desirable that an architect should supply to builders quantities on which to form tenders for executing his design; but in case of such being done it should be with the concurrence of the employer, and the architect should be paid by him and not by the builder."

BRICKS AND TILES.*

THE art of the brickmaker has been practised by nearly every civilised nation of which we have any record; the manufacture of bricks, and the employment of them for building purposes, dating from the remotest antiquity, and the use of that distinctive form of bricks to which we have given the name of tiles being probably almost, if not quite as ancient. Nor is this to be wondered at when it is recollected that in all countries where timber or stone are difficult to procure or to work, the natural resource must be the employment, as a building material, of baked or sun-dried earth or clay, in some shape. In such districts or provinces, however, as furnish stones of portable dimensions, or accessible and easily-worked quarries, and in such as abound in timber, the building art has often made great progress without recourse being had to artificial materials; and in these localities, bricks, being little needed, are often almost unknown, and sometimes even tiles are little employed. Portions of Norway and of Switzerland may be referred to as furnishing examples either of the exclusive use of timber or of its employment in conjunction with only a small quantity of stone for structures. Certain districts of France in the middle ages, and some parts of the north of England and Scotland at the present day, furnish on the other hand instances of the almost universal employment of stone with just so much timber as is indispensable, in each case to the exclusion of brick; but exceptional localities such as these afford almost the only instances of the total absence from buildings of some form or other of artificial building, roofing, or paving materials.

The Babylonians, the Egyptians, and the Assyrians, among the nations of remote antiquity, all made use of bricks, to a great extent, and in the Bible references to this material, as made among all of these nations, are to be found. These references form the earliest authentic accounts of the employment of bricks; but Josephus mentions a tradition which attributes to the sons of Seth a knowledge of their use, and which, if true, would thus carry back their origin to the very earliest period of the history of the human race.

The first mention of bricks in Scripture is to be found in the account (Genesis xi. 3, 4) of the building of the city and tower of Babel. Here the making and burning of bricks is spoken of as the first work undertaken preparatory to building, and it is worth remark that the writer incidentally betrays the fact that he was writing at a time and in a place where stone was principally, if not exclusively employed, for he says, "brick had they for stone."

The next Scripture mention of bricks occurs in the account of the bondage of the Israelites in the land of Egypt (Exod. i. 13, 14, and v. 6-19). Here we have an account of the employment of the captives in the manufacture of bricks, and also in the erection of buildings for Pharaoh.

In the history of David (2 Samuel xii. 31), we have a reference to a brick-kiln, not, however, in the territory of the Jews, but in the adjoining country of the Ammonites; for it is in that history recorded that, having

taken Rabbah, the capital of that country, David, beside other modes of destroying or humiliating the inhabitants, "made them to pass through the brick-kiln."

In the book of Isaiah bricks are twice mentioned, and in both cases in such a way as to show that they were held in low estimation as compared with stone. In the first of these passages (Isaiah ix. 9, 10), the prophet says that the people "say in the pride and stoutness of heart, the bricks are fallen down, but we will build with hewn stones." In the second passage (Isaiah lxxv. 3), a long series of gross breaches of law and propriety are being recited, and among the first of them occurs the reproach that the people "burneth incense upon altars of brick."

In the book of Jeremiah we have again a reference, at a date about eight centuries after the one in the book of Exodus, to the brick-making of Egypt. The Jews at that time had fled into Egypt, and the prophet, who was among them, being about to proclaim the destruction by fire of the gods of the Egyptians, was thus directed; (Jeremiah xliii. 9) "take great stones in thine hand, and hide them in the clay in the brick-kiln, which is at the entry of Pharaoh's house in Tahpanhes."

Lastly, in the book of Nahum, there occurs a reference to the city of Nineveh (Nahum iii. 14), from which it is clear that bricks were understood to be the ordinary material applicable to the fortifications of that city. Foretelling invasion and attack, the prophet says "draw thee waters for the siege, fortify thy strongholds: go into clay, and tread the mortar, make strong the brick-kiln." And these references to the customary employment of brick by the Babylonians, the Ninevites, and the Egyptians will be found corroborated by the accounts of profane historians, such as Herodotus and Xenophon, and by the researches of modern discoverers.

Among these three nations the use of two sorts of bricks, some being kiln-burnt and others merely dried in the sun, appears to have been general; the employment of glazed or enameled bricks as a decoration for the face of walls appears also to have been common both at Nineveh and Babylon, and an immense number of glazed and coloured bricks exist among the ruins of both these cities.

Many ancient bricks show marks of having had reeds or other such substances worked up along with the material of which they were made, apparently to render it more tenacious. The Scripture account of the brick-making performed by the Israelites in Egypt, already referred to, shows that they were compelled to employ straw in forming the bricks they made. It was also, for many ages, customary to stamp each brick with a device, or an inscription, or both, a circumstance which has afforded much useful historical information as to the date and occasion of the erection of the buildings from the ruins of which they come; thus, for example, Mr. Layard was enabled to identify the celebrated "Birs Nimroud" as the ruin of a building of Nebuchadnezzar, by finding that every brick removed from that mound was impressed with his name. Egyptian bricks are usually inscribed, and it was enjoined by law (Smith's Diet. Antiquities, art. "Later") upon the Romans that the bricks they made should be thus marked. Bricks so inscribed have been found in our own country at York, and bear marks showing the presence of certain Roman legions, for or by whom they were made. The same thing has occurred in Germany, and at Caerleon. (Diet. of Arch. Pub. Society, art. "Bricks.")

Herodotus, describing the building of the walls of Babylon, says, "They made bricks of the earth, borne out from the trenches, and having drawn out a suitable quantity, they burnt them in furnaces." This is said to be the earliest reference in profane history to the subject; many subsequent ones might, however, be adduced, relating both to the works of the earlier nations already named, and to those of the Greeks and Romans. Many specimens of inscribed bricks, the Assyrian ones being impressed with inscriptions in cuneiform characters, and the Egyptian ones with hieroglyphics, may be seen in the British Museum. For a full account of the manufacture, as practised by the Egyptians, with an engraving from a celebrated painting in a tomb at Thebes, representing the process, and for illustrations of the almost universal employment of this material, consult Sir Gardiner Wilkinson's Works. (Ancient Egyptians, vol. ii. pp. 97, 98; also Manners and Customs of the Egyptians.)

The Greeks appear to have built less in brick than the Egyptians or the Romans, yet it is clear that they did employ bricks to a considerable extent. Pliny informs us that the Greeks made four sizes of them, and Vitruvius also refers to the same fact. The Romans are known to have employed brick most extensively, and have left many remains of brickwork in every part of their dominions. On this point a reliable authority observes (Diet. of Arch. Pub. Soc.), "Examples might be multiplied of the mention of bricks by Greek writers;" and adds, "The mention of bricks is very frequent among the Latin authors, especially Columella *De Re Rust.* lib. ix. 1, 2, 6, 4; Varro, lib. i. 14, 4; Pliny, *Hist. Nat.* lib. vii. 67, xxxv. 48, 49; and Vitruvius, particularly lib. i. cap. 5, lib. ii. cap. 8; who also, lib. ii. cap. 3, devotes an entire chapter to this subject;" also "Palladius, apud Scriptores, *Rei Rusticæ.*" The bricks of the Romans, and, no doubt, those of the Greeks also, closely resembled our tiles, being flat and hard burnt, and ordinarily of a red colour; Egyptian and Babylonian bricks resemble more closely those in common use in our own country, both in their proportions and in colour, being frequently pale.

Some of the largest masses now remaining of Roman work, executed entirely in bricks, are to be seen at Rome on the Palatine Hill, and in the ruins of the Baths of Caracalla; but the most ordinary manner of employing bricks in Roman work was not to build with them alone, but to introduce them in bonding courses, alternating with courses of loose rubble work, and as voussoirs in turning arches over openings, or in relieving arches

* The above article is taken from a very useful volume just published under the superintendence of Mr. Bennett Woodcroft, of the Great Seal Patent Office, entitled, "Abridgements of the Specifications relating to Bricks and Tiles," and printed by order of the Commissioners of Patents. Price 4s.

instances of this are universally visible in Roman remains, now that the masonry or cement with which such walls were most frequently intended to be faced has fallen away or been removed. During the Empire, the Romans often built walls of rough masonry faced with small hewn blocks, alternating with beds of brickwork, and in this description of work the brickwork was always intended to remain visible.

Roofing tiles were used (Smith's Dict. Antiquities, art. "Tegula"), both by the Greeks and the Romans; the Greeks having replaced those of burnt clay with tiles of marble in their most important buildings. Roofing tiles, and also gutters with ornamental heads for the discharge of the water, and ornaments to cover the junction of the courses of tiles, have been found at Pompeii, executed in terra-cotta, and of beautiful design and workmanship. Similar ornamental tiles have also been discovered among the ruins of the temples at Paestum. Portions of red tile are found along with the marble in the mosaic pavements at Pompeii. Tiles, similar to those now employed for drain-tiles, are found in the Roman baths, built into the solid walls, where they served as channels for the conveyance of water, and possibly also of hot air.

The bricks in common use in Italy at the present day are identical in appearance with those of the Roman remains, and are used in the same way, the manufacture of them and mode of laying having alike remained unchanged. In the plains of Lombardy, however, a rich series of mediæval buildings in ornamental brickwork are found, and in other parts of Italy many examples exist of the use of brick in the middle ages, not as a groundwork to be covered with a face of some other substance, as was the custom of the Romans, but as itself the sole or principal material seen. The Campanile di St. Antonio at Padua of the thirteenth century, the Fero Dei Mercanti at Bologna, built at the end of the same century, the church of Santa Maria in Strata, at Monza, of the fourteenth, the Ospedale Maggiore, at Milan, and the Certosa at Pavia, of the fifteenth century, and the choir of the church of Sta. Maria delle Grazie at Milan, by Bramanti, at the end of the same century, may be named as the most considerable examples of Italian ornamental brickwork, though numerous specimens may be found in Pisa, Sienna, Ferrara, Pavia, Venice, Ravenna, Bologna, and Rome. The manufacture and use of ornamental bricks is carried on at the present day in and around Milan, with considerable success.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.

A MEETING of this Society was held on Thursday at the Architectural Galleries; Mr. TIDY in the chair.

Mr. F. Y. HURLSTONE delivered a lecture on Art in Spain, in connection with a series of lectures by Mr. Otley and Mr. Stewart, on Art in Italy, Germany, and Holland. Mr. Hurlstone remarked that the lectures of those gentlemen were exclusively confined to the modern school of art, but he proposed to lecture on the ancient school of Spanish art. He had no drawings to illustrate his lecture, and some of the finest productions of the Spanish masters had never been engraved. Though the Spanish school was scarcely known in this country, yet in no nation was the national art a more complete reflex of its social character than in Spain. The lecturer proceeded to remark that in the eighth century the Arabs conquered the whole of Spain, except the mountainous region of the Asturias, the cradle of the future Spanish nation, and the inhabitants of which effected the reconquest of the country, which led to the expulsion of the Moors. Spain, like Italy, worshipped her Madonna and Child, and six centuries of what might be called a religious war gave to the religion of the Spanish nation an austerity unknown at that time in Italy, and which stamped its impress on the art of Spain. The Spanish were very much opposed to painting figures nude, or even of having limbs, especially those of the Blessed Virgin, uncovered. The lecturer, after stating that the works of the earliest Spanish painters for the most part perished, referred to the productions of some of the artists who flourished in the time of Ferdinand and Isabella, and regretted that there was no authentic portrait of the great navigator Columbus. He next alluded in terms of eulogy to the Palladian palace of Charles V., at Granada, by Machuca, a structure of which the Spanish were justly proud. The close of the reign of Charles V. brought to an end the classical school of art, and in the reign of his successor, Philip II., arose the school expressive of the national taste and feeling in Spain. After alluding to a number of the principal artists at that period, the lecturer remarked, that from the time of the erection of the beautiful palace of the Escorial by Herera, painting in Spain divided itself into three schools, those of Valencia, Castile, and Andalusia, and proceeded to give some particulars respecting some of the principal painters of those schools, with notices of their works and the peculiarities of their characters. Painted sculpture was an art peculiar to Spain; it was an art totally distinct and apart from sculpture, as we understood it from the great works of the Greeks. He had seen works in painted sculpture which, for grandeur of composition, intensity of pathetic expression, and depth of tone and colour, were remarkable productions and full of impressiveness. That was a department of Spanish art which was not known in this country. And even after the period of greatness in art had passed away, pieces of this peculiar kind of artistic production might be seen in many small figures in Spain. In the time of Philip IV. the national art was swept away, but there was a revival of it at the present day, evidence of which might be seen in the works of Spanish painters at the Great International Exhibition.

The CHAIRMAN wished to know whether what Mr. Hurlstone described

as the painted sculpture of Spain was painted or stained, as the difficulty in his mind was how the effect was produced upon the grey of the flesh.

Mr. HURLSTONE.—The sculpture of Spain was painted with a very considerable body of colouring and several coats, but he could not tell how the effect was produced on the grey. The painted sculpture of Spain was not the same art as the sculpture of the Greeks; it was a style of art totally foreign to what was understood by sculpture, which was simple beauty; but the painted sculpture of Spain was expression of character and of all the qualities which painting possessed.

A MEMBER asked if this painted sculpture was in *bas relief* or in separate figures?

Mr. HURLSTONE said, painted sculpture was for the most part in separate figures, but there were some *bas reliefs* in that style of art; it was very seldom there were *bas reliefs*, the art being almost confined to round figures.

In answer to a question put by Mr. ATKINSON, Mr. HURLSTONE stated that the great sculptors of Spain always coloured their own sculpture. In the great period of art in Spain many of the artists were sculptors, painters, and architects. The painted carving was always in wood, but the paint was laid on so thick that it would not matter whether it was wood, terra-cotta, or marble.

A MEMBER thought it was a question whether wood-carving was sculpture at all.

Mr. HURLSTONE.—Painted sculpture could not be considered as sculpture in the ordinary acceptance of the term, the end of which was the production of beauty. He hardly thought that painted sculpture could be considered the same art as sculpture, but rather that it was a new art peculiar to Spain.

The CHAIRMAN did not see why the beautiful effect produced on wood should not be produced on marble, as Gibson tinted his figures and toned his draperies.

Mr. HURLSTONE.—What Gibson did was not colouring, it was only toning; he gave a slight touch of blue in the eyes, but he could not make black eyes. In 1847, when he (Mr. Hurlstone) was going to Spain, he received a commission from the English government to purchase some specimens of the painted sculpture of Spain for the South Kensington Museum; but after going over Spain he found it impossible to purchase a single specimen worth having, though he met with a vast amount of trash which was called painted sculpture. The fine specimens were not to be purchased.

Mr. ATKINSON.—Was painted sculpture to be found in private houses?

Mr. HURLSTONE answered, that he had frequently found specimens of painted sculpture in private houses, but there were very few fine specimens in private possession, as they were chiefly to be found in public buildings and convents.

A vote of thanks to Mr. Hurlstone closed the proceedings.

LONDON AND MIDDLESEX ARCHÆOLOGICAL SOCIETY.

THE seventh annual general meeting of the members of the London and Middlesex Archæological Society was held at the rooms of the Institution, St. Mildred's Court, Poultry, the other day; Mr. J. B. BUTTERWORTH, F.S.A., in the chair.

Mr. HENRY W. SASS, hon. sec., read the report, which stated that the Council had much pleasure in meeting the members of the Society at the termination of the seventh year of its existence, and had to report that since the last meeting the Society had lost by death 6 of its members, and 8 had retired, but those had been more than replaced by the election of more than 32 members. The present number of members was 350. Since the last annual meeting the fourth part of the transactions of the Society has been published, and is in the hands of the members. The fifth part is in course of preparation. Public meetings of the Society were held on July 2, 1861, at the church of Austin Friars, which was described by the Rev. Thomas Hugo, and Sion College, where the Rev. W. H. Milman, librarian of the College, gave an account of the library, &c. In the afternoon of the same day the members inspected the buildings and monuments of the Honourable Artillery Company, and dined in their hall. On August 23, 1861, the Society held meetings at the town of Uxbridge, Harefield Church, Ruilip Church, an ancient preceptory of Knights Templars, and Swateleys Hall, the seat of T. T. Clarke, Esq. During the day the church of Denham in Buckinghamshire was likewise visited, on the kind invitation of the Rev. C. Hall. Papers were read at the churches and other places of interest. On April 28, 1862, the Society visited the churches of All Hallows, Barking, St. Olave's, Hart Street, and St. Dunstan's-in-the-East. On this occasion the Bakers' Company kindly gave the use of their commodious hall to the members, and presented for their inspection a number of charters, books, and pieces of gold and silver plate. A large party of the members and their friends dined in the Bakers' Hall in the evening. The council suggested to the meeting the propriety of charging all new members with an entrance fee of 10s. This they thought desirable for the purpose of adding to the small revenue of the Society, as well as obtaining some consideration for participation in the property which the Society had accumulated. From the financial statement, it appeared, that after payment of the expenses of the year, there remained a balance in favour of the Society of £35 1s. 11d. The report and balance-sheet were received and adopted, and votes of thanks were passed to the President, Vice-presidents, Council, and Mr. HENRY W. SASS, hon. sec., for their services during the year.

A letter was read from Lord TALBOT MALAHIDE, accepting the office of President for the ensuing year. The retiring Vice-Presidents were re-elected, with the addition of Mr. Alderman Finnis; the retiring mem-

bers of the council were re-elected with the addition of Messrs. J. G. Waller and J. E. Gardner; Mr. H. W. Sass was re-elected hon. sec. for the ensuing year. After the usual compliment to the chairman, the meeting separated.

ST. ANDREW'S CHURCH, LEICESTER.

ON February 28th last, we gave a description of this church, which we illustrate on the opposite page this week. The following are the principal facts contained in our description in the number referred to:—This church was erected from designs by Mr. G. G. Scott, and has been built by Messrs. Osborn Brothers, of Leicester. The ground plan of the building is cruciform, and consists of nave, transepts, and chancel with semicircular apse. It is built in the Early English style, almost entirely of brick, slightly relieved with Bath stone, which is introduced in the arches, the window sills, the weatherings of buttresses, the arcade round the exterior of the apse, and in various other parts of the building. The exterior is principally of red brick, ornamented with blue. The gables are coped with brick, with stone springers. The roofs are covered with Swithland slates, in diminishing courses. The two principal entrances are through a door at the west end and a porch on the south side; and there is also an entrance for children in the north transept. The view presented on entering the church at the west door is good, the rich soft colour of the bricks with which the walls are faced, and the lofty arches which divide the nave from the chancel and transepts, together with the complicated timbers of the roof, adding much to the general effect. Owing to the absence of pillars, the altar and pulpit can be seen from every part of the building. The nave is covered with an open-timbered roof of one span, the ridge of which is about 60 feet above the level of the floor. The principals, which are seven in number, form double arches across the nave, each arch with two parallel circular braces bolted together, the spaces being filled in with light cross braces to form a diamond pattern. These principals spring from shafts at the height of about 12 feet from the floor line. The roofs over the transepts are cross-braced. Wrought boarding covers the whole, and the timbers throughout have been stained and varnished. The nave is seated with open stalls of stained and varnished deal. The transepts are seated with movable benches. The stalls in the chancel are of more elaborate design. The church affords accommodation for about 960 persons. Provision is made for an organ in a chamber over the vestry. The pulpit, on the north side of the chancel arch, has a stone base, formed of a cluster of small octagonal shafts, encircling the centre pillar. The upper part is of deal, carved with a simple ornament. The font is plain, and harmonises with the general character of the church. The floor is laid with red and black Staffordshire tiles, in various patterns. The windows are glazed with cathedral glass, the circles in the upper portion of the nave windows being filled with ornamental designs. The chancel is lighted by a corona, by Skidmore, of Coventry, who has also supplied the standards in the nave, and the small corona which lights each transept. The entire cost of the building is, we believe, about £5,000.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting of this body was held on Monday evening, at the rooms of the Institute, Conduit Street, Mr. ARTHUR ASHMETEL, V.P., in the Chair.

Mr. PENROSE, honorary secretary for foreign correspondence, and Mr. CHARLES F. HAYWARD, honorary secretary, announced a number of donations to the Library of the Institute. They included the second volume (presented by the Secretary of State for India) of "India and High Asia," by Hermann, Adolphe, and Robert de Schlagintweit, illustrated by large plates, maps, and views.

Mr. JOHN HENRY PARKER, of Oxford, was unanimously elected an honorary member of the Institute.

The CHAIRMAN said, Mr. Parker intended to dedicate the remainder of his life to the development of architecture and archæology, wherever they could be found, for the accomplishment of which he had time and ample means at his disposal.

The Architecture of India.—Mr. WILLIAM SIMPSON then read a paper "On the Architecture of India," which will be found referred to in another column. The paper was accompanied by a large number of well-executed drawings in frames, made by the lecturer while visiting as an artist the various buildings in India of which they were illustrations, as well as specimens of red and other stone used in India, and inlaid work comprising precious stones.

Mr. DIGBY WYATT suggested that some committee, or the existing authorities of the Institute, should make arrangements by which a better illumination should be thrown on drawings which lecturers took the trouble of preparing and bringing with them for the illustration of their papers. It must ever be a source of interest to make enquiries into the details of the different styles of architecture in India. In the very earliest monuments of Indian architecture they found the three sister arts of architecture, painting, and sculpture united. In the north-west of India, particularly in the provinces which lay in the line of march of Alexander the Great, there were more traces of classical art. The more ancient the sculpture in India, as a general rule, it was certainly the better. And he would invite architects to study the monuments to be found in the Museum of the Council of State for India, to which had lately been added quantities of sculpture from India, representing styles of sculpture and of stone-carving of almost all periods, and relating to many of the localities of that interesting country. In the library of the Council of State for India were to be found many important combinations of Indian art, and in it would be found many materials which would reward the investigations of the architect and the artist. He thought that Mr. Simpson was entitled to honour at their hands for having as an artist shown, as he had done that evening, the interest he took in the art of architecture.

Mr. J. FERGUSSON said, there was not a building the lecturer mentioned that night which he (Mr. Fergusson) had not seen, and all Mr. Simpson had said

that night, and illustrated by his drawings, confirmed all he (Mr. Fergusson) had ever said or ever drawn.

Mr. CHARLES F. HAYWARD said, it should be known that Mr. Simpson had studied and illustrated wooden architecture.

The CHAIRMAN would be glad if Mr. Simpson would favour the Institute with a paper on wooden architecture, which, of course, they could not expect until the next session.

Mr. SIMPSON said what he knew of wooden architecture might be made the subject of a paper. He was glad to find that the paper read that evening had excited some interest, for he did not think the architecture of India was known as it ought to be.

The CHAIRMAN thought it would be important to notice the way in which wooden architecture acted and reacted on stone construction, and a paper on wooden architecture would no doubt be of great interest.

Mr. SIMPSON said some account of the wooden architecture of the Himalayas would show how it acted and reacted on stone construction.

Mr. J. W. PAPWORTH asked Mr. Fergusson at what time he supposed there disappeared in the architecture of India, that extreme relationship between Greek and Hindoo art, which had been referred to by Mr. Digby Wyatt?

Mr. FERGUSSON.—So far as he knew, there was not a single stone building or a single carving, which was anterior to the time of Alexander the Great. There was then a very strong Greek ornamentation in Indian architecture, which continued to the Christian era. His opinion was that the Greek influence began with the time of Alexander the Great, and died out at the Christian era.

Mr. BURNELL did not think it was possible any person could understand the phases of Indian architecture without following the history of the Indian religions.

Mr. DIGBY WYATT thought, that in the succession of religions, there was a difference found in the character of the sculpture.

Mr. FERGUSSON.—So far as he knew, there was not a single stone building anterior to the time of Alexander the Great, the buildings previous to that being made of wood. As to the effect of religion on the architecture of India, he remarked that pure Brahminical worship was not a temple worship, but a domestic worship, and that explained why temples were not used for that worship, which was a pure, unceremonial one. But the Bhuddist religion became a religion of the state, and temples were built. It was not until the time of Alexander wooden structures were turned into stone ones.

After some further discussion, a vote of thanks to Mr. Simpson was carried by acclamation, and the meeting separated.

METROPOLITAN BOARD OF WORKS.

A meeting of this body was held at the offices, Spring Gardens, on Friday last; Mr. WILLIAM TITE, M.P., in the Chair.

The cash statement showed a general balance in favour of the Board of £160,380 18s. 10d., in addition to £69,892 5s. 11d. invested in the New 3 per cent Annuities, for repayment of mortgage debts.

Proposed Visit of both Houses of Parliament to the Main Drainage Works.—Mr. DOULTON, M.P., said the Chairman of the Board, Mr. Thwaites, before leaving town for the benefit of his health, informed him that there were many members of Parliament who were desirous of visiting the Main Drainage Works, for the purpose of seeing what was going on there, and he thought it was very advisable that the utmost facility should be given to members of both Houses of the Legislature to inspect the gigantic Main Drainage Works. Although he had not given notice of motion, he hoped the Board would allow him to move "That it be referred to the Main Drainage Committee to make such arrangements as may be necessary for the accommodation of members of both Houses of Parliament on a visit to the Main Drainage Works."

Mr. D'INFANGER seconded the motion.

Mr. DEBNER approved of the motion, but inasmuch as certain expenses necessarily attended such visits, the visits of the members of Parliament and of the members of the Board, should take place simultaneously.

Mr. FREEMAN considered it to be of the utmost importance at the present time that members of Parliament should know what were the Main Drainage Works carried on by the Board. There were several bills before Parliament affecting the Board, and it was very desirable that the members of the Legislature should know what the Board was doing.

Mr. HENRY LOWMAN TAYLOR was of opinion that it was very desirable the members of Parliament should see the Main Drainage Works, but the members of the Board should not be excluded from going with them.

The motion of Mr. Doulton was unanimously agreed to.

The Main Drainage Committee made the following recommendations:—

"That during the absence of the Chairman of the Board, a Chairman be elected on every Friday, or other Board day, from the members present at the meeting of the Board."—Agreed to.

"That each Committee be directed to select, at their next meeting, from their number, a Chairman and Vice-chairman, who shall so act, during the pleasure of the Committee."—Agreed to.

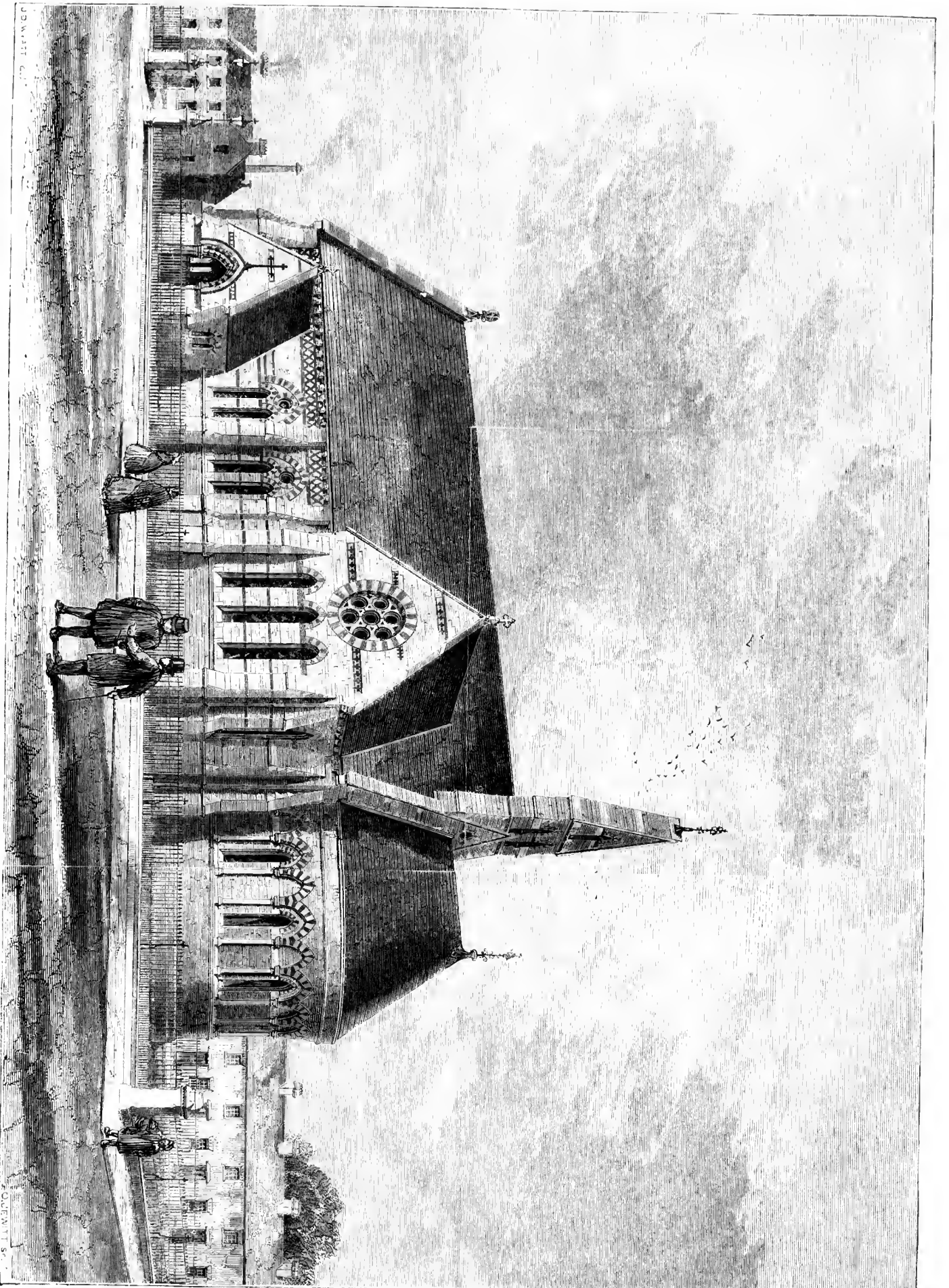
"That during the absence of the Chairman, W. H. Dalton, Esq., be authorised to countersign cheques in lieu of the Chairman, and be requested to attend on the occasion of every payment made at the Office, for the purpose of handing over the cheque to the party entitled to receive the same; and that, with this exception, the present regulations with respect to the drawing of cheques and mode of payment be continued."—Agreed to.

"That during the absence of the Chairman, the Clerk of the Board do countersign the documents signifying the approval of the Board to applications for special buildings under the Metropolitan Building Act, for the formation of streets, &c."—Agreed to.

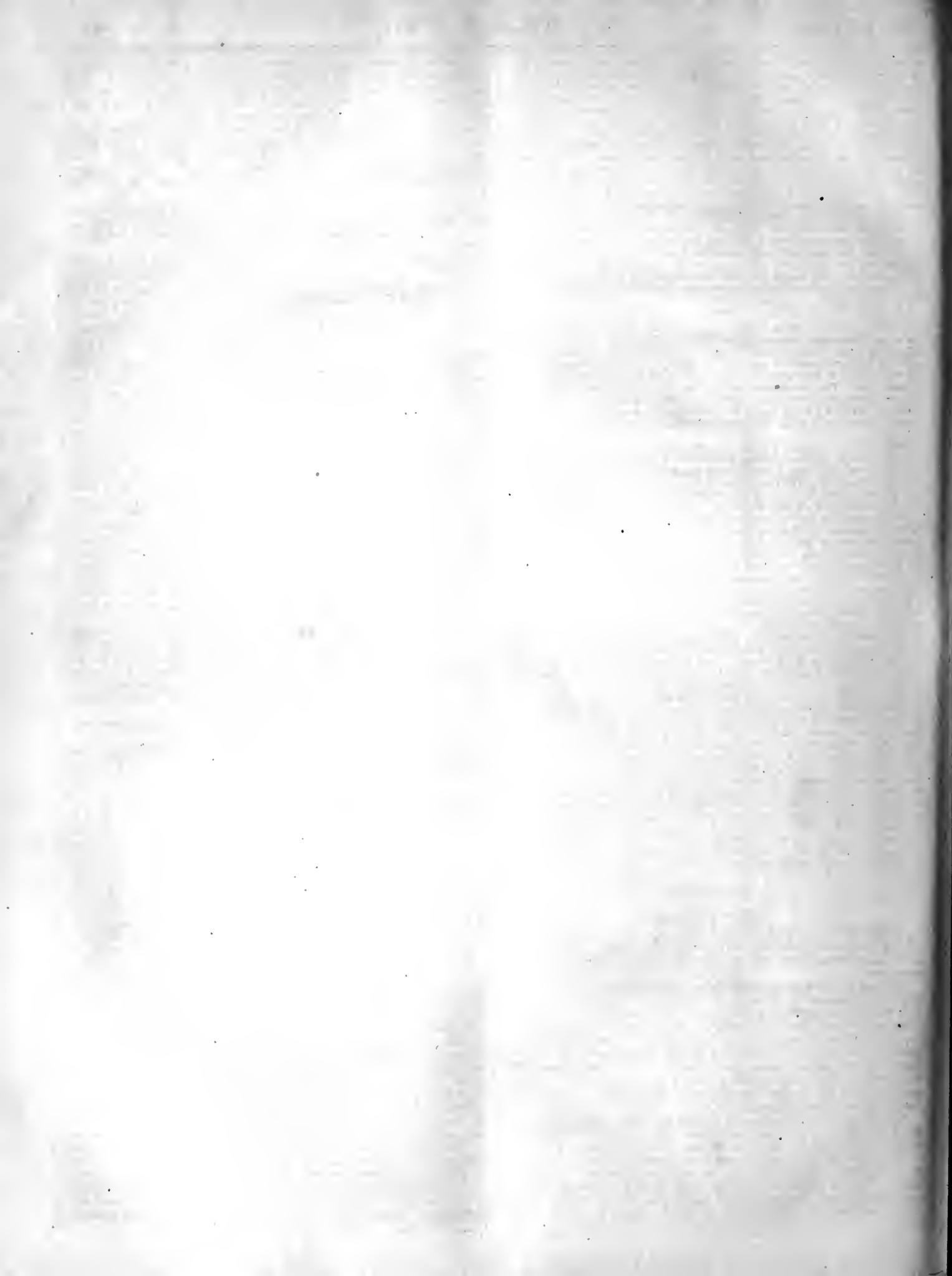
The ordinary routine business having been disposed of, the Board adjourned.

CHURCH, CHAPEL, SCHOOL, AND OTHER BUILDINGS.

NOTTINGHAM.—The beautiful little chapel in Shakespeare-street, Nottingham, which was built a few years ago for the Wesleyan Reformers, has recently been undergoing considerable enlargement and alterations under the direction of Mr. Thomas Simpson, the architect of the building. The chapel, which was originally built to accommodate 700 people, was found equal to the wants of the congregation up to the time of the last visit of the Rev. J. Caughey, when it was found utterly inadequate to the accommodation of the multitudes who were anxious to benefit by his ministrations, and who crowded to the chapel every night, but many of whom were unable to obtain admission, owing to the limited space at command. At that time there was only a small organ gallery at the end of the chapel facing the platform, and it was suggested that the erection of galleries round the building would afford the additional accommodation required, without incurring any great expenditure. Mr. Simpson was consulted on the matter, and eventually Mr. John England, builder, was entrusted with the carrying out of that gentleman's designs. The principal feature in the additions which have been effected is the construction of a gallery which



ST. ANDREW'S CHURCH, LEICESTER.-(See BUILDING NEWS, Feb 28 1872.)



extends round the whole of the chapel, affording additional seat accommodation for 500 people, and so contrived that the preacher can be seen from every seat in the chapel. The organ has been removed to the gallery behind the minister's platform, and the columns supporting the galleries, and the ornamentation round the front, are in excellent keeping with the general style of the building. The symmetry of the whole has been admirably preserved, and the beautiful manner in which the gallery front has been treated, with tasteful scroll-work and *basso relievo* on the red ground, as well as the elegant design and chaste colouring of the organ-case, add much to the general effect. In addition to the gallery, the convenience of the congregation will be promoted by several alterations effected at the back of the chapel, especially by the opening of two additional entrances which will greatly facilitate ingress and egress. A vestry room has been added, and the kitchen conveniences below have been considerably extended—a point of some importance, and the advantages of which will be felt on the occasions of tea-parties and other social gatherings of the congregation. The symmetry of the building has been preserved intact; and when the painting and decoration are completed, it will be, as a chapel, a model of compactness and good taste. The cost of the alterations amounts to between £500 and £600. The chapel has been formally re-opened, and on the occasion of the opening services attended by crowded congregations. (*Abridged from a Nottingham Paper.*)

EXETER.—About twelve months since, the commodious place of worship known as Bartholomew Baptist Chapel, at Exeter, was in so dilapidated a condition that it was deemed absolutely necessary, for the comfort and even for the safety of the parishioners, to renovate it. This was done, and amongst other repairs a new roof was placed upon the building, by which was incurred a debt of about £20. That small sum remains unpaid, the deacons, owing to the limited income derived from the chapel, not being in a position to liquidate it. With the view of getting rid of the burden, a tea-party and social evening meeting is to be held in the Methodist Free Church, Northernhay.

ROTHERHAM.—A public meeting, convened by the vicar, the Rev. R. Mosley, has been held in the Court House, Rotherham, to consider the propriety and desirability of abolishing the pews and adopting free sittings in the parish church of that town. The Rev. Vicar, in opening the proceedings of the meeting, stated that they had a large and beautiful church, surrounded by a numerous population, and yet they knew that the sacred edifice was not filled, nor anything like it, on the Sabbath. All the pews were engaged, except one or two, where persons could neither see nor hear, and yet while so small a congregation attended on Sunday, there were numbers without who would attend if they could secure seats. He wished the meeting to know that the patron and the archbishop of the diocese were in favour of the scheme. Mr. Churchwarden Parker spoke at length on the advantages of free seats and voluntary weekly offerings, and concluded his address by moving a resolution to the effect, "That a committee be appointed with instructions to consider, and report to an adjourned meeting, the propriety of making arrangements for the free use in common of the pews in the parish church by all the parishioners, as the law required." The motion having been seconded, Mr. Percy Smith submitted a series of resolutions in opposition to the system of free sittings, but ultimately withdrew them until the next meeting, as Mr. Parker's motion was only meant to be a preliminary step. The motion of Mr. Parker was then agreed to, and the meeting adjourned.

DUBLIN.—His Excellency the Earl of Carlisle, K.G., Lord Lieutenant of Ireland, received on Monday a deputation from the building committee of St. Andrew's Church, Dublin, consisting of the Rev. C. E. Tisdall, D.D., Rev. E. Seymour, Mr. Manning, Mr. Pettigrew, Mr. Wisheart, and Mr. Acheson, hon. sec. Mr. Acheson stated that the object of the deputation was to request His Excellency to honour the committee by laying the foundation stone of the new church, in which he had taken so great an interest, and in aid of the funds of which he had so liberally subscribed. The Lord Lieutenant was pleased at once to accede to the request. We understand that a letter has been received by the hon. sec. from a gentleman residing at Chapelizod, making the munificent offer of £1,000 towards the building fund, provided the remainder of the sum required for the erection of the church be subscribed. The sum of £3,000 is now all that is required for carrying out the original plans, and of this sum the generous donor referred to offers to give £1,000, provided the remaining £2,000 be subscribed, and we have no doubt that that sum will soon be realised.

GENERAL NEWS.

ARCHITECTURAL EXHIBITION.—A lecture was delivered on Tuesday evening at the Architectural Exhibition, Conduit Street, Regent Street, on "Pagan Architecture," by Mr. WILLIAM BURGESS, before a numerous audience.

The next annual meeting of the Archaeological Institute will take place at Worcester, commencing Tuesday, July 22nd, and terminating Tuesday, July 29th. Lord Lyttleton will preside on the occasion.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—On Wednesday evening the fourth *conversazione* of the season of this spirited society, was held at the Gallery of the Society of British Artists, Suffolk Street, Pall Mall. The performances of the musical artists, of whom Mr. Benedict and Mr. Alfred Gilbert were conductors, were of the highest order, and the proceedings of the evening afforded much pleasure to a very numerous assemblage of ladies and gentlemen.

THE LATE FIRE IN JAMAICA.—An English fire office has paid £3,600 for losses sustained, owing to the great fire in Jamaica, and property in that island was immediately insured in the same office to the amount of £40,000.

THE PROPOSED MEMORIAL TO THE LATE PRINCE CONSORT.—The recommendation of her Majesty the Queen to refer to the principal architects of the day for their opinion as to the nature of the proposed memorial to the late Prince Consort has been carried out, and her Majesty's committee has appointed the following gentlemen:—Mr. William Tite, F.R.S., M.P.,

President of the Royal Institute of British Architects; Professor Donaldson; Professor Smirke, R.A.; Mr. George Gilbert Scott, R.A.; Mr. Pennethorne, Mr. P. Hardwick, Junr., and Mr. Matthew Digby Wyatt. There seems to be a growing feeling in the literary and scientific world to unite the proposed memorial with some scientific or literary institution.

PRESTON NEW TOWN HALL.—A special meeting of the Corporation of Preston was to be held yesterday (Thursday) to decide upon a proposition that a memorial be presented to her Majesty, soliciting her sanction to an application being made to the Prince of Wales, asking his Royal Highness to visit Preston during the Guild week to lay the foundation stone of the New Town Hall.

DESTRUCTIVE FIRE AT QUEEN'S COLLEGE, CORK.—On Thursday morning the western wing of the Queen's College, Cork, was completely destroyed by fire, and it is estimated that the damage amounts to £12,000. The fire is supposed to have been the fiendish work of an incendiary.

IMPORTANT BLASTING OPERATIONS.—In consequence of the large demand for limestone for supplying the ironworks in South and North Staffordshire, it has become necessary at the Cauldon Low Quarries, belonging to the North Staffordshire Railway Company, occasionally to use large blasts of powder, with the view of obtaining a greater supply of the stone than it has been possible to obtain in the usual way of quarrying by the wedge, hammer, lever, and small blasts. This has led to an experiment on a very large scale, when 30 cwt. of powder was used for a single blast. In carrying out the experiment, a gallery was driven in 50 feet from the face of the rock, which at this particular point was about 130 feet high. At the end of the gallery was constructed a chamber, in which was deposited the powder, being nearly on a level with the external surface of the quarry, and the line of "least resistance" being ten feet. The object was to blow out the bottom by giving a moderate preponderance to the powder over the superincumbent mass to be moved. The object sought was fully attained. About 25,000 tons of stone were brought down in good working condition.

IMPROVEMENT OF ODESSA.—Letters from Odessa state that the municipal authorities have at length resolved upon paving and draining the streets, and from a number of native and foreign competitors for the contract have selected Mr. G. Furness, the contractor for the Great Outfall Works at West Ham, in connexion with the metropolitan drainage, and who was represented in Odessa by Mr. Bayliss, the same contractor's engineer for the Pernambuco Railway. The works at present contracted for are estimated to cost £800,000, but it is expected that the Municipality will ultimately expend on works of improvement upwards of £1,500,000. Contrary to popular belief elsewhere as to the venality of Russian officials, it is affirmed that this contract has been obtained openly, without an official *douceur* or bribe of any kind.

MEMORIALS TO THE LATE REV. JOHN HAMPDEN GURNEY.—At a meeting of the memorial committee for the purpose of selecting designs for two memorials, about to be erected by public subscription—one in St. Mary's Church, Bryanston Square, of which the deceased gentleman was rector, and the other in St. Luke's, Nufford Place, St. Marylebone—those by Mr. E. J. Physick, sculptor, were unanimously adopted, and the commission has been given for their immediate commencement.

THE DIRECTORS OF THE BRIGHTON HOTEL COMPANY intend to proceed with the erection of the hotel with all possible expedition.

THE EWART INSTITUTE AT NEWTON-STEWART.—The foundation-stone of this beautiful building was laid at Newton-Stewart on Friday afternoon last, the 16th instant. This institution has been founded, and endowed to the extent of upwards of £10,000, by the munificence of the late Mr. James Ewart, of this town; and its objects, in the first instance, are the maintenance, education, and upbringing of children on principles similar to those observed in Ragged Schools. The day was beautiful, and the scenery, as visible from the Institute, could scarcely be surpassed. The situation of the Institute is on the rising ground immediately to the west of Newton-Stewart, and commands a lovely and extensive view of Cairnmore—Kirkcubright and its beautiful grounds—the valley of Cumloiden—and the Minnigaff Hills. The building, which includes a school and dwelling-house, is after the ancient Gothic style; and with its buttresses and other substantial adornments is quite a novelty in, and adds a new feature to the architecture of the district. That part of the building appropriated for the school is, within walls, 36 feet in length, 21 in width, and surmounted at the south end by an elegant belfry 50 feet in height. The school, which is to be fitted up in the most modern style, has 5 large windows, one of them no less than 14 feet in height, by 12 in width. The height of the roof of the school is to be 38 feet inside. The dressings of the whole building are of beautifully cut and carved white freestone, and the walls are coursed with the finest blue whinstone. An elegant and massive porch adorns the entrance to the school. In regard to ventilation, prevention of damp, and the most modern improvements and requirements, neither skill, pains, nor expense has been, or apparently will be, spared. Immediately behind the house and school (which are attached) there is, besides other useful buildings, a fine bath and dressing-rooms attached. The bath is to be lighted by a plate-glass roof, and supplied with a constant inflow of the purest water. This bath is no less than 18 feet in length, 12 feet in width, and 4½ feet in depth; and, while something new in the district in connection with such an institution, its use must conduce largely to the health of the children attending the school. We believe that it is the intention of the Ewart Trustees to lower, by four feet or so, the south wall of the grounds on which the building stands, so as to afford a better view of that end of this handsome edifice, which contains the large window and surmounting belfry. When this has been done, the visitor will, standing

on the beautiful bowling-green of Newton-Stewart, have, beside the fine spire and church of Penninghame, a view at once of no less than three charitable and educational institutions—namely, the Infant School, the Ewart Institute, and the "Home."

AGRICULTURAL LABOURERS' COTTAGES.—Slowly but surely, says the *Scottish Farmer*, the small, rickety, damp, ill-lighted, and badly-ventilated dwellings of the agricultural labourers are disappearing, and in their stead are rising dwellings more in keeping with the increase of wealth and intelligence which a quarter of a century of agricultural prosperity have brought. Some districts have advanced much further in the good work than others. In the best there are, perhaps, not more than one half of the houses of farm-servants of that one-room type which a previous generation of farmers regarded as quite good enough for their men, and the men themselves did not object to on the score of want of comfort in any shape. In other districts, however, it is still rare to see a neat new cottage for ploughmen. The upper portion of Kirkcudbrightshire might be mentioned as one where as yet little has been done in the way of cottage accommodation. There we still find cottages built of dry stone, the walls differing from a dyke in no other way than in having some lime thrown in a slap-dash way in the interstices on the outside. Drainage there is none, notwithstanding which, the houses are often built in a hollow some feet beneath the road which runs in front of them, and, as the floors are composed of nothing but natural soil, they are in a very sloppy state in winter. A foot-square window is in many instances the only source of light, if we except the door, which, to prevent suffocation by smoke, is usually left open. Numerous houses have no grates, the peats being built up on the floor, beneath where a hole in the roof does—or rather we should say, is intended to, but does not—do duty as a chimney. As might be expected, the furniture of such houses is usually in keeping with the character of the accommodation they afford. A box-bed, and one composed of slabs from the saw mill; a chest or two for clothes, three or four stools, a couple of home-made chairs, and a clock of the description there known as a "wag-at-the-wa," are often all the pleasing. The inmates are not to blame, for any better would be sadly out of place, and glued articles would be destroyed in a week in such hovels. In these wretched dwellings there can be little or no real home comfort. The occupants, too, are not an ignorant class at all. There is no county in Scotland where education is so highly appreciated, the children beneath those miserable roofs receiving a good school instruction. Latin and French being often added to English in the case of boys. We doubt, however, whether the people are so fully alive to the miseries of their accommodation as their class in some other counties would be. We say this, because we find respectable tradesmen with a bit of land, a couple of cows and an account at the bank, living in houses with little more pretension to comfort. This is no valid excuse, however, for proprietors in Kirkcudbrightshire neglecting that which landlords in other counties are beginning to do. When we make a thorough inspection of the condition of the farm-servants in Kirkcudbrightshire—as we hope to be able to do during the summer or autumn—we trust we shall be able to report more favourably upon the county generally than concerning the small portion to which we paid a hasty visit the other day, and where we noticed no change within the last fifteen years, except, indeed, that some old houses had been knocked down and no new ones erected in their stead.

ST. PAUL'S CATHEDRAL.—The committee have made another appeal to the nation at large on behalf of the proposed completion of St. Paul's Cathedral.

ST. THOMAS'S HOSPITAL.—The question of what is to be done with St. Thomas's Hospital, and where it is to go to, has now become secondary to "what is to be done with the Patients?" The interests of these poor sufferers have already fallen to the ground between the two stools of Lewisham and the Surrey Gardens. The Treasurer and Committee have held out, without making other arrangements, in the expectation of some settlement with the Charing-cross Railway Company; but, as the latter require a rental of at least 5 per cent. on the money which the Hospital has cost them (£296,000, besides law expenses—no small item), and will not modify the demand, the Hospital authorities—who refuse to pay a rental which is equal to half their income—are at a nonplus what to do with their patients, as the premises must be cleared, and handed over to the Railway authorities, by the 26th of July. An encampment of huts and temporary sheds in Lock's-fields was spoken of at first, but the idea has been laid aside on urgent remonstrance, and it is reported now that the patients are to be distributed among the Unendowed Hospitals on the other side of the river, a fixed sum being paid for board, lodging, and medical attendance. An objection has been urged to this arrangement that it may call an untoward attention to the distinction between Endowed and Unendowed Medical Institutions, and raise a scandal as to those who do so much for nothing and those who do so little for so much. It is not considered desirable to take any step that might not impossibly originate a commission for the management of Hospital funds, and a more equitable distribution of them, in pursuance of their founder's intentions, on the plan of the Ecclesiastical Commission. St. Thomas's Hospital is largely under the control of the Lord Mayor and Corporation of London. Surely some better method, or rather a method of some kind, in its management ought to be at once adopted. Might not an appeal to the Charity Commissioners be of service? Surely the Attorney-General, if called upon, would move in so important a matter.—*Communicated.*

FAREHAM WATER SUPPLY.—A complete system of drainage and water supply to this town has been completed, comprising large deodorising tanks,

reservoir, &c., about five and a half miles of sewer, and six miles of water main. The supply of water is from two large wells, at the Fareham end of Portsdown Hill, forced into the reservoir by two 15-horse engines. The private drainage and water-service connections have been laid on to about 600 houses; and in the course of six months, the whole of the houses in the town will be completed in a similar way. Previous to the completion of the drainage, many of the houses of this town were really unfit for habitation. The whole of the work has been designed and carried out under my directions.—*T. Buckham.*

CHURCH, CHAPEL, ETC. INTELLIGENCE.

WORCESTER.—A new district church for St. Martin's, Worcester, is about to be erected, from designs by Mr. Hopkins, architect to the Worcester Church Extension Society. The edifice will be of the middle-pointed or decorated style, and consists of a chancel, terminating in a three-sided apse; north and south transepts, each having an eastern aisle, which also communicates with the chancel by an arch; nave, south aisle; and cloister porch, extending across the west end of the church, and connecting it with the tower, which stands detached, a little to the south of the nave. This cloister will form an effective feature, and at the same time be practically useful in keeping out the noise and dust incident to the contemplated position of the church, close to a much-frequented road. The tower is bold and massive, having angle buttresses and double belfry windows, above which rises a lofty well-proportioned broach spire, to the height of 180 feet. On each cardinal face near the base is a gabled lucarne or spire-light, above these is a band of gables; while still higher the outline is relieved by a sort of coronal encircling the spire. The nave is four bays in length, each containing a lofty two-light window. On the opposite side is the aisle, of three bays. At the west end, above the cloister, is a deeply-recessed pointed arch, enclosing a large wheel window; and at the intersection of the nave and transept roofs is an open bell turret. Each transept is lighted by two two-light windows, with a vesica-shaped opening in the gable. The north transept aisle will be appropriated for a vestry and organ chamber. It is intended to use the carved work, and as many of the timbers of the Guesten Hall roof as are sound enough for the purpose. The church will accommodate about 850 persons, and, if carried out according to the design, will form a striking feature in any general view of the city.

MR. SIMPSON'S LECTURE ON ARCHITECTURE IN INDIA.—We are compelled, by a pressure of matter, to postpone to our next the paper read by Mr. Simpson before the Royal Institute of British Architects, on Monday.

STATUE OF PRINCE ALBERT.—The model in clay of the statue of the Prince Consort, which is to be the munificent gift of the Mayor of Manchester to his fellow-citizens, is completed in the studio of Mr. Noble, Bruton Street, Berkeley Square. It presents a remarkably striking likeness of the lamented Prince, and the general treatment of the subject is excellent. H. R. H. is represented as wearing the robes of the Order of the Garter. On the front of the pedestal will be placed the inscription:—"Albert the Great and Good." At the back of the pedestal will be inscribed the words, "Presented by Thomas Goadsby to his fellow-citizens, A.D. MDCCCLXII." The statue is to be of the purest Carrara marble, and will be eight feet in height. It is hardly necessary to state that the funds received by public subscription are to be devoted to providing the pedestal and the protecting temple in which the statue is to be placed. The cost of the temple will be defrayed by the Mayor. As usual, the men of Manchester are up and doing, while others are debating about what shall be done.

ON THE LIFE OF WELBY PUGIN.*

THE name which he devised for his house was St. Marie's Grange. A grange, in Mediaeval language, was a manor-house, or farm-house of the day, belonging to a monastery. To give this name to the new dwelling was no affectation, as is frequently imagined, but a very appropriate act. He had just at that time professed himself a convert to the Roman Catholic church.

In mentioning this conversion I have touched what is the chief question of Pugin's biography: the key to his character, not only as a man, but as an artist and an art-reformer; and I venture to think, that perhaps no one has, as yet, answered the question so clearly as it might be answered,—not even Mr. Purcell, whose arguments in the appendix to Mr. Ferrey's memoir, must certainly be acknowledged to come very close to the mark. Mr. Ferrey, for instance, and others who are artists, seem to lose sight of the religious element of this question. Mr. Purcell, and others who are religionists, can scarcely be expected to introduce effectively the element of art. Both, however, affirm that he was an actual convert of conscience—a doctrinal convert from one creed to another creed. Others have supposed that, feeling no particular interest in either this or that creed as such, he preferred the Roman Catholic connection as matter of business.

These opinions I hope to show are both alike at variance with the character before us: the further story of his life is the evidence in point. I venture to affirm that he was a man incapable of the mercenary motive, but equally incapable of the doctrinal one. So highly do I estimate his artistic character; so thoroughly was he possessed, as I think, with the one idea therein implied; so exclusively absorbed in its contemplation, that I define his religion to have been simply Art—art-ritual, as it happened—and, consequently, Roman Catholic ritual; in other words, altogether apart from dogmas, doctrines, and confessions of faith; so essentially were his ideas identified with the mystical charms of artistic ritual, that, in the state of such ritual thirty years ago, he simply tendered his allegiance to that church which possessed the most. And

* See p. 349, ante.

we shall find before the end, that on the self-same principle, when time brought on its unexpected changes, so that there arose another ritual-church—a Protestant one—in rivalry with the old, he knew not which to prefer.

His own explanation confirms this theory to the full; and the simplicity of mind with which he states the question—his obliviousness to all doctrinal points—is most striking. He describes the views with which such services as those of Edward Irving had informed his youth. It was, he says, with such perverted feelings that he first became a student in *Ancient Art*. But the origin, intention, and use of all he beheld was perfectly unintelligible; till, applying himself to *liturgical knowledge*, what a new field was opened! He then discovered the fitness of the edifices for their rites; he saw the cold and heartless character of the reformed service; he read in old chronicles the crimes by which the new religion had been established, and so on; he opposed to all this the Catholic apostolical system of unchanged faith, sacraments, and ceremonies; and the result was, that he gladly surrendered his own fallible judgment, and embraced with heart and soul the faith and discipline of the ancient church.

No better exposition could be wished than this frank and unsophisticated avowal—frank, because the apologist was no Jesuit; unsophisticated, because he had no pretension, no desire to go beneath the fair and sunny surface on which floated the poetic mysteries of his adoration. "I gained my knowledge of the ancient faith," he says, "beneath the vaults of a Lincoln or a Westminster; and I found it indelibly marked in the venerable piles which cover the face of this land. This period of my life was one of great mental happiness." "An Englishman," he says again, "needs no controversial writings to lead him to the faith of his fathers. It is written on the wall, on the window, on the pavement, by the highway. The cross—the emblem of his hope—still surmounts spire and gable, still waves from the mast of the ship and over the palace towers." The symbols of Christian art he boldly pronounced to be of divine origin. Let this one principle be kept in sight, and it will be the key to the whole career of Pugin's adult life. To him art was nothing without religion, religion nothing without art. His notion of the middle ages was, that this was their universal rule. How far he was right may be matter of opinion; but, in considering that the rule was allowed no application now, his accuracy cannot be questioned. For my own part, I fervently hope that the rule may never again prevail; but I cannot withhold my tribute of admiration from the man whose mind was filled like his with an idea, however illusory, so poetically grand; and my estimate of Pugin is this,—that I know of no other man in architecture who ever unaffectedly embraced the sentiment.

It soon became widely known that the great Gothic artist, dwelling in his quaint Gothic house at Salisbury, had attached himself enthusiastically to the Gothic church. People who had a little insight into the human heart's odd corners hardly smiled—certainly did not wonder; it was all so perfectly appropriate, they said, although they could scarcely tell you why. At this time he was only three-and-twenty; but the Catholic connection speedily and effectually gathered round him, and it was understood that he was really getting into extensive practice.

Emboldened by this success, he now issued a new and most novel work. It was published by the author at St. Marie's Grange: the book-trade had declined to concern themselves with it. This was the famous "Contrasts; or, a Parallel between the Architecture of the Fifteenth and Nineteenth Centuries." It is a book that everyone interested in architecture should examine, for both curiosity and profit. The written argument is simple. The Reformation, the author would say, in overthrowing the Mediæval church, overthrew Mediæval art, which was identified with the church. Protestantism had done nothing since but "horrible repairs," to use his own words, "alterations and demolitions, directed by a tepid and parsimonious clergy, brutal and jobbing parochial authorities, and ignorant and tasteless operatives." Modern Classic edifices were but infamous Pagan caricatures; fitness was the test of sound design; real old Gothic work was the only art that would bear this test; it was Christian art; and it was finally and emphatically Roman Catholic art. Beyond a doubt, to a certain extent, this was correct criticism; and if expressed in a temperate manner, it might have been widely, if not universally, accepted. But it was not temperately expressed; indeed, beyond all precedent the reverse; exaggerated even to such a degree as to lose its very power. The real strength of the essay, however, lay elsewhere: a long series of most clever etchings formed the "contrasts;" and these certainly produced a sensation. After two or three rather weak and over-shot witticisms of delineation at the commencement, he presents, not always honestly, but always most adroitly, one set after another of sketches in pairs. Each pair is formed, of course, on one hand by some example of Mediæval design carefully selected for its merits, and on the other by a corresponding specimen of modern design chosen with equal care for its demerits: his style of drawing, moreover, being all in favour of the more picturesque style. The opinion of almost everyone was, that these contrasts, although marvellously bold and telling, were in a great measure a failure, through the well-known error of proving too much. That there was great critical truth in them—much really sound comparison—the greatest enemies of his conclusions have always admitted; but the celebrated "contrasts," in a word, are a good deal over-contrasted.

Pugin was now no more than four-and-twenty; and the conscious power of genius which he displayed, not in architecture alone but in all kinds alike of Mediæval art, in spite of shortcomings (which tended, by-the-by, all to the side of power), has probably never been equalled in architectural design in the person of so young a man.

His career for the next five years, although full of successful labour, may be summed up in a very few sentences. His abilities in design, universally recognized, procured him a large practice; but his uncompromising adherence to Romanism kept it confined almost exclusively to the connection of that communion. At length he found Salisbury inconvenient head-quarters for business; sold St. Marie's Grange for the price of the ground; and in 1841 established his home at Chelsea, being then twenty-nine years of age, and at the very height of his success. Just before the beginning of these five years he had assisted Barry and Gillespie Graham upon their designs for the Houses of Parliament; but otherwise his work was independent, and soon plentiful. As regards literary endeavour, the five years which had opened with the publication of the "Contrasts" were to close with the issue of the equally celebrated "True Principles," he having written nothing of any moment in the interval. As for his habits of life, in spite of the vast amount of professional labour which he accomplished

(keeping no assistant, but drawing everything with his own hand), he could still spare time for a good deal of eccentric roaming. As when entering upon practice we saw him rushing from cathedral to cathedral, passionately worshipping the old, and heartily cursing the new; so now, when overwhelmed with engagements, we find him cruising in his yacht upon the open sea for days together, and occasionally running down the coasts of France and Holland. The merit of the "True Principles of Pointed or Christian Architecture," as the work was entitled, must be allowed to be superior to those of the "Contrasts." Five years of practical experience in life and business had made an improvement in the author. The book of 1836 was flippant in the extreme; it carried an exuberance of sail, and little ballast. The book of 1841 was less pretentious and more safe. The improvement, however, was not so great as in any ordinary case it ought to have been; Pugin was not by any means to be set down yet in the category of sober men. In spite of his subject being now almost purely abstract, he could not help launching out into occasional philippics as fierce to the full as the fire of his younger days could have made them. In spite of the reminiscences of five years of solid work, he could not refrain from exaggerations as weak as ever.

Pugin had not yet learnt that intelligent debate never condescends to deal with sorry misadventures, failures, and caricatures; but, grappling with an opponent's strongest and proudest, by efforts of still greater strength and greater pride, wrestles upon the highest ground at once. Again, the hasty and rude engravings of this work, badly shaded and even badly drawn, were discreditable to an artist who was held in such wide esteem. Nevertheless, the work was successful, and in that early day of modern Gothic, deserved to be so.

He lays down two indisputable but novel ideas: 1st. That a building ought to comprehend no features whatever except such as are necessary. 2nd. That all ornamentation ought to be formed by mere enrichment of construction. He pointed out that Greek forms of design being based on wooden structures, the artists of that day erred in using them in stone; whilst the first principle of Pointed architecture, on the other hand, is to disguise nothing and compromise nothing. The underlying sentiment of his life, devotion to artistic-idealism, is more fully developed than before. His prayer is that the church may again, as in days of old, cultivate the talents of her children, to the advancement of religion and the welfare of their own souls; for without such results talents are vain, and the greatest efforts of art sink to the level of abomination. He begins with sound philosophy, and ends with what in any other man we should call cant.

Some may feel inclined to ask whether I wish it to be understood that Welby Pugin now sold St. Marie's Grange for a mere song, and went to settle in a common twelve or fourteen roomed house at Chelsea, with two-inch deal ovolo sashes hung in deal-cased frames; and the hall and staircase papered Sienna marble, at twopence a yard, and varnished. It is impossible, you will say, after what we have heard. And so it would be. Pugin sold St. Marie's Grange, at Salisbury, only to build the Grange of St. Augustine's, at Ramsgate. He had tired of the one place, and taken a fancy to the other; but his Mediæval house he had not tired of, and he set to work to revive it forthwith. His stay at Chelsea was but a temporary measure. We are not now, it is true, dealing with the whims of youth; but the settled purposes of manhood are in this remarkable character still as strange, and, in their defiant consistency, still as original as ever.

The establishment which he now began to build may possibly have been at first projected within moderate limits; ultimately it came to include, besides a dwelling-house of much larger size than St. Marie's Grange, a church, schools, and conventual buildings, with complete appurtenances and characteristic detail. He spent in all £15,000; his operations were spread over ten years; and he left them incomplete after all. So soon, however, as the house was ready, he removed to it from Chelsea; and it was his home till his death.

Now, during these five years, from 1836 to 1841, from the "Contrasts" to the "Principles," what had been the progress of English architecture, and what the value of Welby Pugin therein? The state of professional opinion upon which the "Contrasts" fell in 1836 was through Eclecticism, as has been stated. The practical force of that work lay, not in any introduction of Gothic design, or any improvement in classification of style (for all that Pugin knew in these forms had been developed by others and was fully recognized), but in an exaltation of Gothic style to the prejudice of what was considered to be a sister style of equal esteem. The Christian, he argued, could have no fellowship with the Pagan, even in the profile of a moulding. There has been of late years a vast deal of this style of logic spoken and written—all borrowed plumage from Pugin; at that time he was the only man who hazarded such views, and everyone else pronounced him to be a monomaniac. I have the same opinion of him now; but I say that his monomania was so unaffected, so poetic, so exalted, as to lift it up to heaven. To understand the principles then prevalent, take Hosking's Essay on Architecture, in the "Encyclopedia Britannica," of date 1832, or the basis upon which the Royal Institute of Architects was established in 1834—1837. There were certain recognized styles of design, of various degrees of merit, but all equally entitled to claim critical authority under the rule of ancient precedent. The Classic styles of Greece and Rome came first. They were of superhuman origin; the only difference between them was, that the Greeks were as gods, the Romans as demigods. These were the grand styles. Italian examples of the Cinque-cento period were to be judiciously copied for municipal buildings; and English specimens of the Tudor and Elizabethan for domestic and educational works. For ecclesiastical works the examples of Mediæval England, as classified by Rickman, were to be copied in the same manner as those of other styles. There could be no reason, said the authorities, for ever disturbing this. The great controversy respecting the style to be used in the New Houses of Parliament in 1835—1836, was the expression of this condition of opinion: the argument was, on the one hand, that for so grand a work the Greek or Roman style was entitled to the preference; on the other, that for a building of such profound ancestral associations, the style ought rather to be Gothic or Elizabethan. The decision in favour of the latter sentiment was thought to be the triumph of feudal affectation in Parliament over refined Eclecticism in public. It was Pugin who first formally repudiated this happy-family arrangement of the Eclectics; and but for the error of exaggeration, the "Contrasts" would have done it more damage than they did.

There followed almost instantly upon Pugin's declaration the institution of a new doctrine, namely, Architectural Ecclesiasticism; the idea, that is to say, of searching out the mysticism of ancient church art—that which had been the very

foundation of Pugin's mission. Although Pugin would listen to no Ecclesiasticism out of the Romish Church, yet it was chiefly in the English Church, and particularly amongst the clergy, that his teaching struck root. And thus, as at the commencement of the five years which we have in hand, the standard of Ecclesiasticism had been raised against the rule of Eclecticism; the hand which did this being Pugin's alone. At the close of our five years this was the result.

The Camden Society of Cambridge was established for the promotion of Ritualism; the *Ecclesiologist* Journal was set on foot in the same cause. Pre-Raphaelitism and Puseyism we need only name; but all over England, and chiefly under the guidance of the clergy, there were being formed one after another of the local Archaeological Societies now so numerous; as part of the same act, church restoration was becoming universally fashionable; and, to end with an anti-climax for the sake of truth, and for the sake of justice to our hero's consistency, a few of the most earnest of his followers were embracing, like himself, and for the self-same reasons, the Romanist faith. Meanwhile, the Royal Exchange of London, and St. George's Hall of Liverpool, had been built as further examples of Classic art; and Gothic practice had attained that well-remembered stage of maturity which produced in 1842 the Camberwell Church of Mr. Scott, and shortly afterwards his proud competition church at Hamburg. Now, I do not claim for Welby Pugin the sole merit of all the progress here involved; but I cannot see why there should be denied to him the credit of having been, amongst many busy workers, at least the first and busiest; amongst many earnest thinkers the most earnest, if not always the most safe; amongst many enthusiasts the most enthusiastic; amongst many sublimated fanatics the most sublime. To argue that Pugin was not the leader of our present school of Gothic architects seems to me impossible; and for my own part I only wish his followers had followed him more closely, and kept more at home in England than they have done. I admire Gothic architecture more than I can admire recent specimens. If Pugin had lived till now, I cannot help thinking that one of his True Principles would have been this—that for English work English precedents must be the best; and if he had come to recognise Protestantism, that another would have run thus: that in Protestant churches the symbols and arrangements of Roman Catholic ritual must be necessarily out of place.

(To be concluded in our next.)

PUBLIC MONUMENTS.

THE Cross is the earliest and the most national of our public monuments. It dates from the first traditions of our island history in the "Suenos stone" near Forres, and the curious monuments which have been ably reproduced by the care of the Spalding Club in the "Sculptured Stones of Scotland." Four crosses still stand on the consecrated shores of Iona, where it is reported that 360 of these venerable monuments once marked spots dear to piety and affection. The large Iona cross in front of the cathedral is a monolith column of the hardest whin rock, 14 feet high, 18 inches broad, and 6 inches thick. It is fixed in a pedestal formed out of a massive block of red granite about 3 feet high. "The labour and art," says Mr. Graham, "of quarrying such a column, of transporting it to the island, and of carving and erecting it when it was brought, are circumstances really astonishing when one considers how inadequate the power and the skill of this part of the country would now be to such a work." It would seem that the practice of erecting these crosses lasted in Iona down to the Reformation, for that of Abbot Mackinnon, still standing, bears date as late as 1489. For monuments on a comparatively small scale, connected with the memory of the dead or with ecclesiastical associations, we know of nothing comparable in effect to these crosses, and their monolithic character gives them importance and extreme durability. But under the denomination "cross" we include not only these primeval monuments of a rude antiquity, but some of the most exquisite remains (alas! too few) of Gothic architecture. Most of the cathedrals had their "cross" in the precincts of the chapter-house: thus Paul's Cross was the scene of the great ecclesiastical debates of the Middle Ages and the Reformation, and also the Forum of the citizens of London—though indeed Paul's Cross had no claims to monumental beauty, if, as Strype states, it was merely "a pulpit cross of timber, mounted upon steps of stone, and covered with lead."

These mediæval crosses had not necessarily an ecclesiastical character. The Cross of Coventry, which was the most elegant and splendid fabric of the kind in England, was built in 1541 by a bequest from Sir William Holles to the city for municipal ornament. It was of a hexagonal shape, 57 feet high and 42 in circumference, decorated with the most elaborate tracery of the time: unhappily it was taken down by an "improving" corporation in 1776. The crosses of Cheddar, Malmesbury, and Chichester are small roofed buildings of the form which may also be seen in the curious, though not very pleasing, Royal Cross of Aberdeen.

The crosses which marked the transport of the body of Queen Eleanor from Hereby in Lincolnshire to Westminster, have all but disappeared: that which occupied the well-known site in the village of Charing (supposed by some to be derived from *chère Reine*), still lives in the name of the busiest thoroughfare of western London. The crosses of Geddington and Northampton (the Queen's Cross) are preserved, and the cross of Waltham, erected on the same melancholy occasion by the piety of Edward I., has recently been most skillfully restored. It is a hexagon, each side of the lower story divided into two arches, charged with the arms of England, Castle, Lion, and Pontifich: the puffed finials of the second story cover twelve open tabernacles, intersected by pillars, the niches being filled by

* Antiquities of Iona, p. 22.

† The reader interested in this subject will find an "Essay on Ancient Stone Crosses" of considerable interest, though by no means complete, in "Britton's Antiquities of Great Britain," vol. i. No. IV. Mr. Petrie's work on the "Round Towers of Ireland" contains the best notice we have seen on the ancient stone crosses of that island.

appropriate figures; and the third story rises in solid masonry to support the shaft of a plain cross on the summit. In our judgment, no monument designed to commemorate the dead can be more touching and appropriate than this. It admits of the introduction of sculpture, it admits of inscriptions; and provided it be suitably placed, as, for example, in the quadrangle of a college or a cathedral close, it may unite all the conditions of a Christian and English monument. Indeed, the example of the Scott monument at Edinburgh, which is in fact one of these crosses, shows that it may be placed without impropriety even in the thoroughfares of a great city, which has in other respects nothing of the mediæval character. We confess that we regret that the monument erected at Sentari, by order of Her Majesty, to record the gallant endurance of the British army in the Crimean war, did not assume the shape of one of these eminently national structures, endeared to us by historical tradition and religious associations, in place of the obelisk of Cornish granite which has been placed there.

Some years ago the present Dean of St. Paul's, who was then a canon of Westminster, proposed the execution of a monument to Caxton, near the Almonry, Westminster—that being the spot where the first English printing-press had been worked. The proposal was well received and supported by a small number of accomplished persons, who felt the fitness and grace of such a memorial; but it did not excite much public interest, and, for want of funds, it fell to the ground. We now advert to it for the purpose of noticing the very appropriate character which Dr. Milman had wished to give to this monument. He suggested that an ever-flowing fountain, combined with a statue of the first English printer, would be no inapt symbol of the spring opened by the printing-press to the knowledge and improvement of mankind. No doubt the introduction of fountains, in itself a desirable and refreshing thing in large cities, might, with excellent effect, be combined with monuments: thus the French have erected a striking fountain-monument to Molière, and many other examples might be cited in Rome and elsewhere of fountains which have a monumental character. In their way, though they are for the most part unpretending and diminutive, many of the drinking-fountains lately introduced in London, and several other large towns, deserve to be noticed among our public monuments. They are in every way grateful. They offer a simple refreshment, which often diverts the hot and weary labourer from the gin-shop. They mark a kindly feeling towards the humbler classes by giving to every man "a cup of cold water;" and as specimens of art many of these little works are very pleasing additions to our street architecture. They serve to show how much more might be done with the introduction of a conduit of running water, when a more important monument is contemplated and more ample funds are forthcoming. No capital in Europe is so well provided with water as London in the mains underground, or so little beautified with the freshness of streams above ground. A fountain on an imposing scale is still wanting to the metropolis, and, as far as we know, there is not a town in the United Kingdom which can boast of a good one; yet fountains may well be ranked amongst the most pleasing and useful of public monuments.—*Edinburgh Review*.

FIRES IN LONDON.

(From the MECHANICS' MAGAZINE.)

THE Select Committee, appointed some three months since by the House of Commons, to enquire into "the existing state of Legislation, and of any existing arrangements for the protection of life and property against fires in the Metropolis," have completed their mission, and made their report. This has been published, and it may be well to investigate its averments. The alarming increase in the number of destructive fires in London during the last few years, and the apparently quite inadequate means possessed for their suppression, had, indeed, rendered legislative enquiry necessary. The Committee set out in their report with a statistical comparison of the number of fires in London in past years as compared with the number which occurred in 1861. For example, they state that in the year 1833, 458 fires occurred in the Metropolitan districts, whereas in the year 1861, the number was 1,183. So startling an augmentation forms of itself a severe consideration of the existing arrangements for the prevention of fires, that it needs no argument to sustain it. The area of the Metropolitan police districts includes, according to Sir Richard Mayne, 217 parishes, with a population of about 3,000,000, residing in 462,000 houses. The rateable income for taxation in the mammoth town and its immediate suburbs is about £13,500,000. The extent of space included in the calculation is bounded by a radial line of 16½ miles, with Charing Cross for its centre, and this gives, therefore, an area of 700 square miles. The City of London, however, is not included, but within its boundaries are 97 parishes, with a population of about 115,000, inhabiting some 13,500 houses, and the rental for rating is £1,337,000. Thus it appears that the whole of the Metropolitan police districts, and the City of London together, may be considered as containing rather over 3,000,000 of inhabitants, in about 745,000 houses, whilst the rental for rating may be taken in round numbers to be £14,800,000.

These facts and figures convey a clear idea of the range and importance of the trust confided to those who are charged with the guardianship against the disastrous consequences of accidental or incendiary fires. The Committee state that "the only existing Act of Parliament for the prevention of loss by fire, affecting parishes within the bills of mortality, is that of the 14 Geo. 3, c. 78, and called 'an Act for the further and better regulation of buildings and party walls, and for the more effectually preventing

mischiefs by fire within the Cities of London and Westminster, and other liberties thereof, and other the Parishes of St. Marylebone, Paddington, and St. Luke's, at Chelsea, in the county of Middlesex." The clauses in this Act, which relate especially to protection against fire, are those numbered from 74 to 86, both inclusive, and they are still in form. The other parts of this Act have been repealed. By the 76th clause, every parish is obliged to keep one large engine, and one small one, termed a hand-engine, besides a leathered pipe, and a certain number of ladders. A provision, moreover, exists in the 3 and 4 Will. IV., c. 90, 344, and known as the "Lighting and Watching Act." This Act extends to England and Wales, and it empowers inspectors appointed under it to provide and keep up two fire-engines. Certain parishes, without the bills of mortality, have availed themselves of that provision. The meagreness of all these arrangements is sufficiently obvious, and, meagre as they are, they have not been attended to.

The Select Committee state—and it will conduce to a more exact understanding of the whole question if we reproduce the substance of their statement—that for many years previous to 1832, the principal fire insurance offices kept fire-brigades at their individual expense. To these brigades were attached a considerable number of men usually occupied as watermen on the Thames. These latter received payment only on the occurrence of fires, and they wore the badge and livery of the various companies by which they were subsidized. These fire-brigades were considered as giving notoriety to the different insurance companies, and a rivalry was maintained among them, productive of good sometimes, and considerable evil at others.

The expenses and inconvenience arising from this unsatisfactory state of affairs induced Mr. R. Bell Forde, a director of the Sun Fire Office, to make, in 1832, an effort to reform the system. This consisted principally in a proposition for the amalgamation of the guerilla bands—as they might be termed—into one body. Mr. Forde's plan was adopted, and hence sprang into existence the London Fire-Brigade. The leading Metropolitan insurance offices contributed their quota to the support of the brigadiers on conditions laid down by representative committeemen from the various companies. Without tracing the subsequent changes made in the mode of governing the London Fire-Brigade, it may be stated that at its organisation, in 1832, it consisted of 80 men, while the number of fire-stations was 19. The cost of the brigade and its appliances in that year was £8,000. This expense has been gradually increasing, as has the nominal strength of the body and the number of engines employed.

At present the London Fire-Brigade consists of 127 men, and the stations are 20 in number.

The destruction by fire of the Houses of Parliament, in 1834, very naturally drew the attention of the Government to the means for suppressing fires generally in London. It is only justice to the fire insurance companies then in existence to say that they admitted the inadequacy of their arrangements for preventing and overcoming fires. A suggestion was also made, at the same time, for placing the parochial engines under the control of the Metropolitan police. This latter notion might, if realised, have been attended with some good probably, but the Government of the day did not adopt it, and so the fire-brigade has remained with all its anomalies and shortcomings—as regards the system, we mean, upon which it was based—until now.

It is needless to recapitulate the arguments for the reconstruction of the London Fire-Brigade which were energetically urged in the pages of this Magazine immediately after the great fire of last year, because that disastrous event, and the innumerable catastrophes of a similar though less ruinous kind, which have happened since, have demonstrated the absolute necessity for such change. But it is certainly refreshing and encouraging to find from the report now under notice that "the insurance companies addressed on the 21st of February last," the very day after the first meeting of the Select Committee, "a letter to the Secretary of State for the Home Department, stating their wish and intention to give up the brigade at as early a date as may be consistent with the formation of new and efficient arrangements for the protection of the Metropolis against fire." They state in that communication that, "so long as the expense was moderate they did not object to incur it; but now it had assumed a magnitude which they cannot continue to bear, and that they consider that the public of London have no claim whatever on their respective offices for protection against fire." It certainly was rather late in the day for the companies to admit their deficiencies, and show their readiness to abdicate their functions as the suppressors of London fires; but it is satisfactory to find them, at last, so completely in accord with the public sentiment. The fact of their being so renders legislation on the subject more facile, because now there are no dissentients to the needed reformation of the fire-brigade. The fact was, that the system, having outlived its time, its abolition will be hailed, by the vast and populous districts of the Metropolis, with real satisfaction.

There is no reason to doubt the efficiency of the staff comprising the Insurance Companies' Fire-Brigade, so far as personal courage or determination is concerned. On the contrary, they appeared to have been well selected and trained, and, in many instances, their services have been of immense value. There is no reason, therefore, why officers and men should not be absorbed in the more extensive organisation which it may be trusted, will presently be called into being to supplant it. Indeed, this Committee recommend some such step as this, and there can scarcely be any objection to offer to it.

There is much valuable evidence adduced in the report, with regard to fires generally, and the means adopted in the large cities and towns of the

kingdom for preventing and overcoming them. As respects large establishments in London, too, the committee have sought out, and now given to the public, a considerable amount of useful information. The dock companies have taken especial care to make themselves, to a great extent, independent of extraneous aid in the suppression of fires which may break out on their premises. The East and West India Docks are particularly well cared for, as touching this matter. So is the Royal Mint; and among private firms who have endeavoured to provide means, not only for the preservation of their own property, but of that of their neighbours, too, we may mention Messrs. Brown, Lenox, and Co., of the Isle of Dogs, and Mr. Hodges, of the great distillery at Lambeth.

Honourable mention is made in the report of the "Society for the Protection of Life from Fire," and undoubtedly that society has proved of inestimable value in many instances. It is just one of those institutions of which Englishmen may be legitimately proud, and of which we happily possess a considerable number. Supported purely by voluntary contributions, and having for its object the saving of human life, it is to the Metropolis what the National Lifeboat Institution is to the rock-bound coasts of England—a guardian and friend to those who are in imminent peril. No less than £7,000 per annum have been subscribed for the support of the Society for the Protection of Life from Fire for eighteen years, and this speaks eloquently of the benevolent disposition of our countrymen. Into the question of obtaining a more adequate and ready supply of water for the purpose of suppressing fires in the metropolis, it would be premature for us now to go. It is one which will have to be considered, nevertheless, in conjunction with that of the formation of the New Metropolitan Fire-Brigade, and at the proper time we shall advance an opinion as to the best mode of effecting it. There are several other points connected with the Report of the Fire Committee which will be treated on in another article. We most cordially concur in the general conclusions of the Committee, which conclusions, indeed, embody the propositions offered last year in our own pages. There are but three absolute and official recommendations offered to the House of Commons in the report, namely:—

"1. That a fire brigade be formed under the superintendence of the Commissioners of Police, on a scheme to be approved of by the Secretary of State for the Home Department, to form part of the general establishment of the Metropolitan Police, and that the acts requiring parishes to maintain engines be repealed."

"2. That an account of the expenditure of the New Police Fire-Brigade be annually laid before Parliament, together with the general police accounts, in such a manner that the special cost of the brigade may be ascertained."

"3. That the area of the new fire brigade arrangements be confined within the limits of the Metropolitan Board of Works, with the option to other parishes to be included, if within the area of the Metropolitan Police."

The policy of confining the action of the brigade to the limits named is not transparent; but it is only "recommended" that those limits be observed, and probably the House in its wisdom will extend them.

THE DIGNITY OF LABOUR.

MUCH has recently been said about the glories of the International Exhibition, but up to the present moment speakers and writers have been almost altogether oblivious of the claims of labour and the labourer. Commissioners, jurors, guarantors, exhibitors, and others, have had bestowed on them criticisms in abundance; but the *workman* has been forgotten. Even Tennyson, in his inaugural poem, had no word of praise or encouragement for him. What said Elihu Burritt, while in this country, in 1851, when the first International Exhibition gladdened the eyes of millions? Listen:—

"During the last months of 1850, thousands and tens of thousands of the well-skilled artisans of Prussia, Austria, and other German states, had laid down the peaceful implements of their handicraft and were training their fingers to the bloody trade and weapons of war. And was this the time?—was this the juncture of favouring opportunities for the Great Exhibition of the arts and industries of all nations? So its originators believed. Against the mind of the million they believed it steadfastly. To their faith the *now* had come for the complete realisation of the magnificent conception. Unaided by legislation, with no governmental power or authority to lean upon, they sent out their idea, dovelike, among the divided populations of the earth. It dropped into the hearts of peoples like a still small voice of Divine inspiration. It permeated the minds of the masses, and touched their sympathies to the finest issues. It worked upward into the highest ranks of human society, and downward into its lowest conditions; and pervaded and united all with the common sentiment, that the great day of UNIVERSAL LABOUR had come, when it was to be crowned with glory and honour, and the homage of potentates and peoples. Away upon the sea, to distant islands and continents, flew the summons of that thought; and the sons of toil, of every handicraft, and clime, and colour, opened their hearts to its message; and it thrilled their fingers with such ingenious activities as never before wrought in the mechanical creations of human skill. The great day of LABOUR had come. The queen of all the earthly conditions of humanity was to be brought to her throne, with kings and queens as her train-bearers, with shoutings of grace and glory to her sceptre from the many-tongued myriads of her subjects. Labour, patient, peaceful Labour, that from the

closed gates of Paradise went forth weeping into the wilderness of life, and tracked it with the red pathway of her bleeding feet; Labour, that had made bricks without straw in Egypt, and lain pale and hungry, and begged for crumbs on the door-stones of palaces, which her blistered hands had filled with dainties which the eye and appetite of ungrateful luxury could not enjoy; Labour, that had walked and worked her way through the barbarisms and feudalisms of the past, with the fetter-prints of bondage still fresh and crimson around her limbs; meek, lowly-minded Labour had come to her immortal *now*, to the day of her august coronation. And her lowly men of might, who bore in their sunburnt foreheads and in their horny hands the dusky signets of their loyalty, felt that her day was come. And with a new sentiment of dignity, the pearl-divers of distant seas, with strong and downward beat, descended to deeper fathoms of the ocean's depths, and searched its shining bed for 'gems of purer light serene' than ever shed their lustre on regal courts; the diamond-diggers of different zones hunted with new ambition for the costliest stones of the earth's treasury to stud the coronation jewellery of Labour; and the trappers of frozen regions, and the fishermen of the Poles, the men of the mines of deeper fathom than the sea; the diggers and workers of all the precious and useful metals and minerals which the earth contains; the workers of the spindle, shuttle, and needle; the artisans of hostile countries forgot their nationality in the sentiment of the dignity of their common condition, and all wrought, with the highest enthusiasm of their genius, to bring the masterpieces of human art to the crowning of Labour. And the kings and queens of the earth felt that the first jewels of their crowns owed their lustre to Labour, and they brought them forth to shine among the gems of her coronation, in the great Temple of Peace and Concord. And the first queen of the world acted as bridesmaid at the royal robing of Labour, and in sight of the congregated nations she set the tiara of the world's homage on her brow, and gave her a glorious bride, to the dignity of universal humanity, as the first-born and fairest of the earthly offspring of Omnipotence. And who among the thousands that filled, or the exulting millions that surrounded, the Crystal Temple on that august occasion, could doubt that its illustrious *now* had come, with its world-full of the finger-prints and finger-guidings of Divine Providence; with its favouring sympathies beating fellowship in the bosoms of nations: with attractions and unprecedented opportunities for the realisation of this magnificent scheme of peace and human brotherhood?"

MR. WILLIAMS ON ECCLESIASTICAL ARCHITECTURE IN GEORGIA AND ARMENIA.

ON Tuesday evening the Rev. GEORGE WILLIAMS, B.D., of Cambridge, delivered a lecture at the Architectural Museum, South Kensington, "On Ecclesiastical Architecture in Georgia and Armenia." In the unavoidable absence of Mr. A. J. Beresford-Hope, the President of the institution, the chair was occupied by Mr. JOSEPH CLARKE, hon. sec. The lecture was accompanied by a number of drawings and plans. The lecturer said:—

In proceeding to perform the task which I have undertaken, of bringing under your notice some of the ancient Ecclesiastical Monuments of one of the most venerable and interesting churches in Christendom, I think I shall best engage your interest in the subject, if I ask you to follow me on a short Ecclesiastical tour, which I made on the banks of the River Kur, the ancient Cyrus, in August 1860, visiting the churches and convents in the same order in which I saw them, but without entering into any incidents of travel, which, however interesting, have nothing to do with the proper subject of this paper.

We must then commence our survey at the picturesque village of Borjom, the summer residence of the present Viceroy of the Transcaucasian provinces of Russia, as it was of his predecessor, Prince Woronoff. And I must not allude to the Viceroy without paying a tribute of gratitude to Prince Baryatinsky, through whose courtesy and kindness I was enabled to undertake these expeditions on which I collected the notes which I am to bring before you this evening. I had not been five minutes in conversation with him at my first interview, when he referred to the numerous monuments of ancient Christian architecture, which are found in the forests about Borjom, and when he found how deeply I was interested in the subject, he first conducted me himself to the two churches which I shall first describe, and then engaged for me the kind services of Prince Toumanoff, the Governor of the province of Abkhazie, to facilitate my expedition to the Upper Kur, where he told me some of the most interesting and remarkable ruins were to be found.

I was so fortunate as to have for my companion my friend Mr. Witts, whose very accurate drawings of several of these churches will serve to convey to you a better idea of them than any mere description could do. They are executed by himself, from sketches made on the spot, while I was busy with my measuring tape, making as careful a survey as time permitted of the various buildings, which I proceed to describe. I have thought it right to mention my authorities, because the measures, and elevations, and plans, which I give, differ very materially from those which are found in the works of Brosset and Dubois de Mont Pereun; which last named worked is utterly untrustworthy, so far as my own observations qualify me to judge, in the architectural sense. M. Brosset's book has been of great service to me for the translations of Georgian inscriptions, furnished to him by a native of the country who travelled with him.

With these preliminary remarks, I proceed to a description of the Conventua, Church of TIMOTHESMANE, which I have not found elsewhere described. I visited it twice; first, on the evening of my arrival at Borjom, in company with the Viceroy, and again on my return from my expedition to Abkhazie, for the purpose of taking the measures which served as the elements of the Plan and Elevation which you see before you. This convent was situated in a romantic valley, at the distance of about fifteen miles from Borjom, near the mountain-stream of the same name, which debouches into the Kur at the village, after a

circuitous course through rocky valleys at the foot of lofty hills, covered with rich and variegated foliage.

Of the conventual buildings nothing remains except the massive ruins of the great entrance gateway, and fragments of walls, and foundations all overgrown with rank vegetation. All these fragments indicate that the convent was built of red brick, as is also the church, with the exception of the south porch and the roofs, which are all constructed of slabs of stone in excellent masonry, with ridges at the joints, as in leaden roofs, and a bold overhanging cornice. The exterior ground-plan of the church, which is in excellent preservation (considering that it has been abandoned now for many years), is an oblong parallelogram of about 65 ft. by 48, with a porch in front nearly square (18 ft. 8 in. from N. to S., and 18 ft. 1 in. from E. to W., interior measure), and another at the south which measures internally 18 ft. 8 in. from W. to E., and 14 ft. from N. to S. But though the ground-plan is a parallelogram, the roofing indicates that it is a cruciform church, with a polygonal lantern of twelve sides, rising from the intersection of the transepts.

I proceed to a survey of the interior: It consists of *nave*, with *side aisles*, a *transept*, extending the whole width of the building, and a well-developed sanctuary, flanked with *prothesis* and *diaconicon*. The interior measures are as follows: from W. to E., the nave, 22 ft. 9 in.; the transept, 17 ft. 10½ in.; the sanctuary, 16 ft. 4 in. The nave is 18 ft. 3 in. wide; the aisles 6 ft. 5 in., exclusive of the piers, which are 4 ft. 3 in. each: giving to the church a total length of 56 ft., and a width of nearly 40; but small as these dimensions are, the church conveys an impression of great dignity and solemnity. The nave is of only one bay, and is separated from the aisles by pointed arches, the flat surfaces of which are decorated with frescoes, representing gigantic figures of kings or princes apparently, as they have a martial appearance, and are vested in a costume very similar to the present national dress of Georgia, with scimitar-shaped swords, still seen in this country and among the Caucasian tribes. In the centre of the arch is a cross, between the heads of the figures. The aisles are covered with Barito roofs of massive stone, leaving a low clerestory below the eaves of the nave-roof, which is not pierced with lights. The transept is lighted with a double-light window on the south, and a triplet on the north, quite of a Norman character. The walls of the transept were formerly covered with frescoes, but they are not so well preserved as those of the nave. The lantern rests on pendentives, supported by two massive octagonal columns on the west, and on responds in the extremities of the *parabemata* [wall of the sanctuary] on the east, and is exquisitely light and elegant. Unfortunately I had no means of ascertaining the height, so that in this particular my elevation is conjectural. The sanctuary has an apsidal termination within, as have also the *prothesis* and *diaconicon*; the former of which communicates both with the sanctuary and the north transept, while the latter opens only into the south transept. The sanctuary is lighted with three round-headed windows, very much splayed, the flanking chapels with one light each, of a similar character. A stone bench runs round the apse, left in the thickness of the wall, the *synthronus* of the eastern as of the western churches; and at some height above this the wall is decorated with a horizontal band in fresco, of arabesque character. The arches are all devoid of mouldings, and the church must always have been more dependent on its proportions and artistic decoration than on its architectural features, for the grand and solemn effect which even in its deep decay it still retains. It appears to belong all to our date, except the west and south porches; but as no inscription is to be found in any part of the building, and there is no Monasticism of Georgia that I am acquainted with within the reach of the archaeologist, I fear I can throw no light upon the date of this very interesting church, which I must mention is called *Cimothisman* by a great Georgian authority, cited by Brosset, whose name I will not attempt to pronounce (M. Dimitri Méghwineth-Khontzsis-Chwili), and whose brief description of the Monastery contains nothing of importance.

DABA.

On our return to Borjom, about half-way from Timothesmane, Prince Baryatinski conducted me to another church, at a short distance from the road, hung on the steep side of the mountain, where it descends into a valley watered by the Borjom river, which meanders through it. This small gem of a church is situated under an overhanging rock, fringed with foliage, out of which it might almost seem to be chiseled. So exquisitely fine is the masonry, that the joints of stone are scarcely visible under the profusion of arabesque ornament, with which the whole of the west front is covered; as fresh as if it had been executed yesterday.

This church was a complete contrast in plan and proportions to that which I have just described; but I afterwards found reason to believe that this was a type of a village church, as that was of a large conventual or cathedral church, and that it was a happy accident which thus introduced me to two typical churches in my first essay in Georgian ecclesiology. The Church of Daba consists of a rectangular chamber, terminating in an apse, the chord of which is the whole width of the chamber. The rectangular part is divided into two bays by pilasters in the side walls, and is lighted by small round-headed windows in each bay, with another in the apse, all very much splayed. All these windows are richly decorated externally with exquisite arabasques running on broad bands between the mouldings, deeply chiseled in the stone, the east window being richest of all. The west front, however, is the most richly ornamented part of this beautiful little church. It consists of a flat-headed doorway under a lofty round arch, with a plain tympanum, the door itself being set in a square-headed frame of two orders, the flat surfaces of which are adorned with rich arabasques, similar to those round the east window. An inscription in Georgian characters, in excellent preservation, is carved on the lintel of the door. Over the circular arch is a small window similar to the others, and like them, surrounded with bands of arabesque ornamentation; and above this, in the ngle of the gable, is carved a small cross. The heavy, overhanging cornice, and the ribbed stone roof, complete this exquisite composition, which measures only 37 ft. 4 in. by 23 ft. 11 in. externally, the walls being 3 ft. 10½ in. thick, and the eastern wall giving no indication externally of the apse which exists within.

Happily, this building is dated in the inscription on the lintel, the letters of which are deeply cut and filled in with vermilion. I need not trouble you with a literal translation: the facts which may be deduced from it are as follow:—That the church was dedicated to the Incarnation, and was built by the Chancellor of the Exchequer ("Chief of the Treasurers," is the literal translation) of

George VI., surnamed the Illustrious, the only son of Demetrius II.: in the year of grace 1333. It probably owes its perfect preservation, after an interval of more than 500 years, to the protection afforded it by the shadow of the great rock, not less than to the excellent materials of which it is constructed.

(To be concluded in our next.)

GENERAL ITEMS.

THE CRYSTAL PALACE IN A NIGHT STORM.—Last Wednesday se'nnight, says the *South Eastern Gazette*, we had an opportunity of being inside the Crystal Palace during the violent thunderstorm that visited the neighbourhood of Sydenham. The novelty of the sights that presented themselves was striking and marvellous. In a moment, from intense darkness the whole building was lit up—every object standing out as bright as in day in all the distinctness of the stereoscope, to which indeed it might be compared, with the additional association of grandeur in its fullest extent. At another time the western end of the centre transept assumed the character of a brilliant luminous mass, with a vividness that lightning only possesses—brighter far than the sun. Then, again, the roofs were illuminated, all their beautiful proportions exhibited, and their outlines distinct and dazzling, as though studded with millions of diamonds. Turning to the southern side we looked out upon the expanse that lay before us; here the scene was magic in its character. From intense darkness, flitted, at rapid intervals, every object, statue, fountain, tree, shrub, terrace, and the distant country to Sevenoaks, in brilliancy that can scarcely be described by language. We never before witnessed anything so peculiarly beautiful and grand.

GAS.—The village of Welwyn, near Hertford, on the Great Northern line of railway, has recently been lighted with gas by Messrs. Adkins & Son, the well-known engineers of Chesham and Fleet Street, who have erected the works for G. E. Dering, Esq., of Lockleys Hall, a gentleman residing in the neighbourhood. The works, a neat brick block, are situated near the entrance of the town from the London road. The main pipes are well distributed, reaching as far as Lockleys, and the Railway Company are anxious to have it extended to the station. The inhabitants have fallen in with the undertaking, and the liberality of the proprietor of the works is appreciated by the most influential of them consuming the gas.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—At a private meeting of the members of this body, held at the rooms, 9 Conduit Street, Regent Street, on Monday evening, "to reconsider the resolutions respecting professional practice and charges of architects," Mr. Owen Jones, V.P., in the chair, it was moved by Professor Donaldson, seconded by Mr. Street, and resolved—"That the paper of professional practice and charges of architects last published by the Council, and forwarded to the members, be now confirmed and adopted." The next ordinary general meeting of the session will be held on Monday next, when a paper will be read "On the Architecture of India," by Mr. William Simpson.

BEAUTY.—As long as Athens and Sparta maintained their independence and reverence for the laws was the basis of their constitution, taste was immature, art was in its infancy, and Beauty was far from swaying the disposition. It is true, poetry had essayed an elevated flight, but only in the soarings of genius which we know is closely connected with a state of rudeness, and is a light which frequently shines from the midst of darkness; which thus testifies rather against them for the taste of its age. As the golden age of art advanced under Pericles and Alexander, and the influence of taste extended more widely, we find no more Grecian energy and freedom. Eloquence adulterated truth; wisdom was an offence in the mouth of a Socrates, and virtue in the life of a Phocion. The Romans, we know were obliged to exhaust their strength in civil wars, and enervated by eastern luxury, to bow beneath the yoke of a future dynasty, before we see the triumph of Grecian art over the rigidity of their character. And the dawn of civilisation did not break over Arabia, until the energy of its warlike spirit had become relaxed beneath the sceptre of the Abassides. The fine arts did not appear in modern Italy, till the powerful alliance of the Lombards was broken, till Florence had submitted to the Medici, and the spirit of independence in all those vigorous states had given place to inglorious submission. It is wellnigh superfluous to cite the examples of modern nations, whose refinement increased in proportion to the decrease of their self-dependence. Whenever we turn our eyes to the past, we discover that taste and freedom desert each other, and that Beauty founds her dominion only upon the ruins of heroic virtue.—*Schiller*. [Beautiful as is this passage from the illustrious German poet, and replete as it is with historic illustrations, we do not for a moment believe with the writer that, abstractedly, "taste and freedom desert each other."—*Ed.*]

COPYRIGHT IN ORNAMENTAL DESIGNS.—BOARD OF TRADE, WHITEHALL, MAY 8.—The Right Honourable the Lords of the Committee of Privy Council for Trade give notice, that the period of regulation of copyright of ornamental designs in Class 1 (articles composed wholly or chiefly of metal) has been extended by them, under the powers conferred upon their lordships by the Act 13 and 14 Vic., c. 104, from three to five years, and that the fee of £1 will be charged for an original registration for five years. For every additional year for which registration of any ornamental design or class of ornamental designs in metal may hereafter be extended, the fee of 10s. only will be charged, instead of 30s. as heretofore.

Correspondence.

THE LECTURE ON PAGAN ARCHITECTURE.

Sir,—From the nature of the title, and the wanted facetiousness of the lecturer, I expected something very novel and startling indeed, at Conduit Street, on Tuesday night; imagining that Paganism, freshly watered at Parnassus, and jockeyed by a mediæval Puck, would have been full of reckless, racy curvings, and restive whims; so that thoughts as bright as diamond sparks would have been scattered as a laughing cloud among the shaking bodies of astonished hearers; but where high-seasoned and strongly-coloured burlesque was looked for, there came only the mildness of milky melodrama.

A visit to the Acropolis convinced Mr. Burges, as it had done all before, of the high pretensions of its monuments—they awed him into respect, wrung from him the accents of admiration, and the very dust of disintegration became, in his eyes, as "oxidized gold."

But the architecture of Greece, reasons Mr. Burges, is not suited to the climate of England; and then taking up the grand postulate of his discourse, he explains that St. Paul's is not at all like Greek architecture, and is therefore unsuited to our wants and unworthy of imitation! Such, at least, was the impression I carried off; and but for this attack upon our classic renaissance, it would have been simply necessary to substitute "Greek" for "Pagan," to give a truthful index to the paper, and to free it from the evidence of an ill-sustained desire to sneer.

COSMOPOLITE.

TENDERS.

CHURCH AT WISPMINGTON.

For pulling-down and rebuilding church at Wispmington, near Horncastle, Lincolnshire; Messrs. J. B. and William Atkinson, York, architects.
Young, Lincoln..... £1,095 0 0 | Pattinson, Huxington..... £900 0 0
Ward, Lincoln..... 1,073 0 0 | Wallis, Wragby..... 925 0 0

GREYFRIARS CHURCH, READING.

Restoration of Greyfriars Church, Reading; Mr. Soutan Hoordman, architect. For carpenters and smiths' work to roof:—
Mr. H. R. Lawrence..... £1,180 0 0 | Mr. Woodroffe..... £936 0 0
Mr. Perry..... 1,088 0 0 | Mr. Strong (exclusive of smiths' work)..... 900 0 0
Mr. H. Cooper..... 1,094 10 0 | Mr. Sheppard (accepted)..... 899 0 0
Mr. Sawyer..... 1,090 0 0
Mr. Matthews..... 999 0 0

The tender of Messrs. Wheeler, amounting to £1,800 for masons' work, was accepted.

MODEL COTTAGES, HEREFORDSHIRE.

For a pair of semi-detached model cottages, at Lynton Court, Herefordshire, for R. M. Lingwood, Esq.; Messrs. Elmslie, Francey, and Haddoo, architects, Hereford, Malvern, and London.
Pearson and Son, Ross..... £330 0 0 | Watkins, (accepted), Hereford... £270 0 0

VILLAS AT HAMMERSMITH FOR J. SAUNDERS, ESQ.

Mr. William Paice, architect, Temple Chambers, E. C. Quantities supplied.
Hill..... £292 0 0 | Bottom and Co..... £769 0 0
Booth..... 888 18 4 | Fish..... 744 0 0
Clark..... 799 0 0 | Foster..... 720 0 0
Sharphington and Cole..... 777 0 0 | Styles (accepted)..... 722 0 0

KNIGHTSBRIDGE.

New Buildings, 3 South Place, Knightsbridge, for Sir A. C. Stirling, C.R. Mr. Henry Clutton, architect, 9 New Burlington Street, W. Quantities by Mr. Crocker.
Macey..... £4,316 0 0 | J. Anson..... £4,400 0 0
G. Myers and Sons..... 4,412 0 0 | G. Mansfield and Son..... 4,750 0 0

COMPETITIONS OPEN.

CATHEDRAL.

CORK.—Architects are invited to furnish designs for the erection of the cathedral of St. Finbar, Cork, at a cost not exceeding £15,000. A premium of £100 will be given for the best and most approved plan, and £50 for the second. Plans and designs to be sent to the hon. secretaries, Ven. the Archdeacon of Cork, Rev. J. N. Woodroffe, or T. M. Osborne, Esq., Cork, not later than the 1st of August next. Further information and a plan of the site may be obtained on application to W. C. Bennett, Esq., notary public and Chapter clerk, 15 South Mall, Cork.

CHURCH.

LEAMINGTON.—Plans and estimates, in sections, are required for the completion of the parish church of Leamington. The nave, the chancel, and the north transept being already built, it is intended to proceed to erect the remaining portions of the work in sections. Architects are invited to send in plans and estimates, in sections, for erecting the south transept, the vestry, the lantern tower, and the bell tower; which it is intended to build in strict harmony with the architectural style of those portions of the church now erected. Increased accommodation in the church is most desirable. A premium of £20 will be given for the best set of plans and estimates in the opinion of the Committee, which must be sent, sealed and under motto, to Mr. G. Rogers, Newbold Street, Leamington, on or before the 21st June, of whom all further particulars may be obtained.

SCHOOL.

RAMNOR.—Plans and specifications are required on or before the 1st June, for the Knighton National School, Ramnorshire, comprising Boys', Girls', and Infants' School and Class Rooms, together with residences for Master and Mistress. For information as to site and other particulars, apply to the Rev. J. R. Brown, incumbent of Knighton.

LIBRARY AND READING ROOMS.

FIRMINGHAM.—The Free Libraries' Committee of the Council of the Borough require plans, sections, specifications, and estimates for the erection of a free reference library and reading-rooms, lending-library and news-rooms, and gallery of art, upon the piece of vacant land adjoining the Midland Institute Building, with an elevation uniform with the said building. Intending competitors are requested to send in their plans, specifications and estimates, under cover, to Thomas Standbridge, Town Clerk, Town Clerk's Office, Temple Street, endorsed "Plans for Free Reference Library Buildings," on or before the 1st June. Particulars of the accommodation required, and of the conditions of competition, together with a lithographed plan of the site, may be obtained on application.

MEMORIAL.

GLoucester.—The committee appointed to carry out the Hooper Memorial, at Gloucester, invite sculptors to submit models of designs for the figure of Bishop Hooper, which is intended to be placed under the canopy of the monument just erected in the churchyard of St. Mary de Lode, Gloucester. The models or statuettes to be carved in stone, and to be one quarter the real height (7 feet). The author of the best design, approved by the committee, will be appointed to execute the full-sized figure, and the sum of ten guineas will be awarded for the second-best design.

ALMSHOUSES.

SALTERS' COMPANY.—A plan is wanted by the Salters' Company for almshouses to accommodate twelve almswomen and six almsmen, on a plot of ground, about twenty miles in the country, comprising two acres, it being proposed to expend on the buildings and the necessary drainage, a sum not exceeding £35,000, a premium of £100 is offered for the plan which shall be considered the most eligible for the purpose. The successful party will be expected to furnish a proper specification of the requisite works, and the premium will be paid immediately it is ascertained to the satisfaction of the Court of Assistants that the proposed buildings can be erected for the sum mentioned. A plan of the ground and

statement as to accommodation wanted can be seen at the office of the Clerk of the Company, at Salter's Hall, St. Swithin's Lane; at which office the plans must be delivered on or before Tuesday, the 3rd day of June, 1862, before 12 o'clock at noon.

COMPETITION AWARDED.

BLUE COAT SCHOOLS, STOCKTON-ON-TEES.

The premium in this competition has been awarded to the design of Messrs. Pritchett and Son, of Darlington, which was selected out of twenty designs submitted, and is to be carried out by them at a cost of about £2,000.

CONTRACTS OPEN.

BARRACKS.

CHATHAM.—For improvements to soldiers' casemated barracks. St. Mary's. Tenders to be left at the Royal Engineer office, Chatham, where bills of quantities may be obtained up to Friday the 30th inst.

ALDERSHOT.—For painting externally the cavalry barracks, Aldershot, in the county of Hants. Copies of the specification, conditions of contract, and forms of tender to be had at the Royal Engineer office, Aldershot, up to the 2nd of June proximo.

WOOLWICH.—For renewing the slating and lead gutters of the soldiers' barracks, right wing, Royal Artillery Barracks, Woolwich, by measurement. Parties desiring to tender for the execution of these works, to leave their names at the Royal Engineer office, Woolwich, on or before the 4th June.

COAST GUARD STATION.

HAYLING BRIDGE, HANTS.—For the erection of a coast guard station at Hayling Bridge, near Havant, Hants. Drawings and specification may be inspected at the Coast Guard Station, Hayling Bridge, or at the Admiralty Coast Guard office, Spring Gardens, London, to Saturday, 31st May; and tenders received up to the 2nd of June.

METROPOLITAN MAIN DRAINAGE.

SOUTHERN OUTFALL WORKS, CROSSNESS.—For the construction of engine-houses, a boiler-house, chimney, fifth-hoists, coal-sheds, dwelling-houses, wharf-wall, sewers, and other works in connection therewith, at Crossness, Erith, Kent. Plans, &c., may be obtained at the Metropolitan Board of Works office, Spring Gardens, until 3rd July. Tenders to be sent in on 4th July.

CHURCHES, ETC.

SITTINGBOURNE, KENT.—For the erection of a new church at Sittingbourne, Kent. Plans to be seen at the office of Mr. Wimbles, Walbrook, Mansion House, London, and tenders will be received by Mr. Smith, Rose Place, Sittingbourne, up to the 31st May.

SOMERSET.—For building a north aisle, and making additions to the east end of the parish church of Weston, near Bath. Drawings, &c., with Manners and Gill, Architects, 1 Fountain Buildings, Bath; to whom tenders endorsed "Tender for Works at Weston Church," on or before the 24th inst.

IRELAND.—For the erection of a new Catholic church, to be built at Kenmare. The parish priest will show the plans and specifications, and will receive tenders up to June 1.

WARWICKSHIRE.—For repairing and restoring the parish church of Long Compton, Warwickshire, near Chipping Norton. Sealed tenders, directed to the Rev. H. Lamphier, Long Compton Vicarage, Shipston-on-Stour, on or before the 24th May.

CROPREY, OXON.—For the renovation and enlargement of All Saints Church, in the hamlet of Great Bourton, Cropredy, near Banbury, Oxon. Plans to be seen at the office of Mr. William White, Architect, Wimpole Street, London to the 24th inst., and at 8 High Street, Banbury, to the 2nd of June. Tenders received to June 3rd, by the Rev. the Vicar of Cropredy.

CHAPELS, ETC.

USK, MONMOUTHSHIRE.—For the erection of a new chapel and vestries on the site of the present Congregational Chapel at Usk, Monmouthshire. Particulars may be obtained of the architects, Messrs. W. G. Hatherson and Pite, 38 Bloomsbury Square, London; Park Square, Newport, Monmouth; and Belvedere, Tredegarville, Cardiff.

MANCHESTER.—For the erection of a chapel and school-room, in Booth Street East, Chorlton-upon-Medlock. Sealed tenders to the Rev. T. E. Evans, 108 Brunswick Street, Upper Brook Street, not later than the 24th inst. Plans, &c., with Mr. Robert Jones, 6 Moreton Street, Strangeways.

PLYMOUTH.—For a new Congregational chapel and schools at Plymouth. Plans to be seen at Norley Chapel School-rooms, Plymouth. Tenders received up to 2nd June.

SCHOOLS.

DEPTFORD.—For making alterations and additions to the school of John Addey's Charity, Deptford. Plans and specifications may be seen, and further particulars obtained on application to Joseph Liddiard, Esq., Architect, 5 Kent Terrace, Upper Road, Deptford. Tenders to be delivered at the offices of Mr. W. Sandom, Solicitor, Slades Place, Deptford, on or before 2nd June.

VILLAS.

ELTHAM, KENT.—For the erection of a pair of semi-detached villas. Tenders to be sent to Mr. T. Chester Haworth, Surveyor, Eltham, before 4 p.m. 23rd May.

HANTS.—For the erection of a villa residence at Botley, Hants. Plans, &c., at Mr. Hardy's, harness manufactory, on and after the 22nd inst. Tenders to the architect, Mr. John Colson, St. Swithin Street, Winchester, on or before the 5th June.

ROAD-MAKING, ETC.

FINCHLEY.—For making road and drains at Finchley. Plans to be seen at the office of Mr. V. Prance, Solicitor, 37 New Bridge Street, Blackfriars.

NOTTS.—For the execution of sewerage and road-making on the North Gate and Beacon Hill Estates, Newark-upon-Trent, Nottinghamshire. The following rough quantities are here stated, in order to indicate approximately the extent of the proposed works; but parties tendering will have to take out for themselves the quantities necessary for that purpose. On the North Gate Estate: 30 ft. roads, including 6-ft. footpath on both sides, 775 ft. run; 6-feet footpaths, extra, 410 feet run; stone kerbing to footpaths, 1,950 feet run; paved and pitched channelling outside of footpaths, 1,525 feet run; 15-inch pipe-sewer, 33 feet run; 12-inch ditto, 456 feet run; 9-inch ditto, 680 feet run; gully-cesspools, with 6-inch pipe overflows to sewers, 6 in number. On the Beacon Hill Estate: 45-feet road, including 7½-feet footpath on both sides, 516 feet run; 7½-feet footpaths extra, 520 feet run; stone kerbing to footpaths, 1,550 feet run; paved and pitched channelling outside of footpaths, 1,035 feet run; 15-inch pipe sewer, 114 feet run; 12-inch ditto, 530 feet run; 9-inch ditto, 440 feet run; gully-cesspools, with 6-inch pipe overflows to sewers, 4 in number. Plans, &c., at the offices of the Conservative Land Society's surveyor, Mr. James Wylson, 33 Norfolk Street, Strand, London, W.C.; also at the offices of Mr. Alfred Allen, Market Place, Newark-upon-Trent. Tenders on or before May 24, addressed to the surveyor, as above, and endorsed "Tender for Works at Newark."

DWELLING HOUSES.

STAFFORD.—For the erection of five houses, at Forebridge, for Mr. John F. Bridgwood, Wolverhampton Road, Stafford. Drawings, &c., with Mr. Henry Ward, architect, Bank Passage, Stafford.

PARSONAGE HOUSE.

ABERAYRON.—For building a parsonage house for Henlywynn, at Aberayron, Cardiganshire. The drawings and specifications to be seen at the Feathers Hotel, Aberayron, from Monday, 19th May until Saturday, 31st inclusive. Further information may be obtained from the Architect, Mr. R. J. Withers, 51 Doughty Street, London. Tenders to be delivered to the architect, on or before Monday, 2nd June.

CEMETERY WORKS.

BIRKENHEAD.—For the erection of three chapels, registrar's house, gate lodge, entrances and boundary walls, for the Cemetery at Flaybrick Hill, Birkenhead, &c. Plans and form of tender at the Commissioners' offices, 55 Hamilton Square, Birkenhead; and further particulars obtained of the architects, Messrs. Lucy and Litter, Traumaere, near Birkenhead. Tenders in sealed covers, endorsed, "Tenders for Cemetery Buildings," addressed to the Chairman of the Cemetery Committee, to be delivered at the Commissioners' offices on or before the 28th inst.

ASYLUM.

NORFOLK.—For the erection of male and female infectious wards at the Thorpe Asylum, Norfolk, and also for building four workmen's cottages on a piece of land adjoining it. Plans, &c., with R. M. Phipson, Architect, County Surveyor, Norwich, to the 24th inst.; and painters willing to tender for painting the whole of the outside wood and iron-work at the said Asylum, may see the specification for it at the same offices. Tenders to F. J. Blake, Esq., Treasurer and Clerk to the Committee of Visitors, King Street, Norwich, on or before the 24th inst., enclosed separately in sealed envelopes, and endorsed "Tender

for Infectious Wards," "Tender for Workmen's Cottages," and "Tender for Painting," as the case may be.

WORKHOUSE.

LIANTS.—For the works required to be done in making certain alterations in, and additions to the Alverstoke Workhouse. Plans, &c., at the Board-room of the workhouse on and after the 15th May, or at the office of Mr. Thomas Hellyer, Bouverie House, Ryde, Isle of Wight, Architect, of whom every information may be obtained, and bills of quantities may be had.

RAILWAY WORK.

INVERNESS AND PERTH JUNCTION RAILWAY.—For the construction of the two remaining sections of the line, viz.:—The Kingussie contract, extending from Kilmara Post-office to the south side of the river Spey, measuring about 13 miles or thereby, comprising about nineteen small bridges and culverts, with a timber viaduct across the Spey. The excavations and embankments consist of about 470,000 cubic yards. The Dalwhinnie contract extends from the south side of the Spey to the boundary of the county of Perth, measuring 15 miles or thereby, and consists of thirty-two small bridges and culverts, and about 430,000 cubic yards excavations and embankments. The rails, chairs, sleepers, spikes, fish-plates, and bolts will be supplied by the Railway Company. Drawings, &c., at the office of Joseph Mitchell, Esq., C.E., Inverness, from whom, or from the assistant-engineer on the line, duplicate schedules may be obtained at £2 2s. each. The line is staked out at distances of every 100 feet, according to the working sections. The deepest cuttings are also fitted to ascertain the nature of the materials in the excavations. An assistant-engineer will be at the County March, near Dalnacardoch, on the 20th May, at 10 o'clock a.m., to accompany the contractors over the Dalwhinnie contract; and at Spey-bridge, near Kingussie, on the 21st, to go over the Kingussie contract, and to point out the works and sites of the bridges. The draft contract proposed to be entered into will be seen with the assistant-engineer, or at Mr. Mitchell's office. Sealed tenders, addressed to the secretary, and marked "Tender for Inverness and Perth Junction Railway Works," "Dalwhinnie" or "Kingussie Contract," as the case may be, must be lodged at his office, on the 25th May, at 4 o'clock p.m.

RESERVOIR.

BLACKBURN.—For the construction of a new reservoir, to be called the Fish Moor Reservoir, adjoining the Guide Reservoir, near Blackburn, for the Directors of the Blackburn Waterworks. The work will consist principally of an embankment of 47 feet in height, containing about 340,000 cubic yards of material, with the masonry, stone beaching, and other work connected therewith. Plans, &c., at the office of the Water Company, Clayton Street, Blackburn; and at the office of Mr. Bateman, engineer, 9 St. James's Square, Manchester, and sealed tenders (a form of which may be had on application), endorsed "Tenders for Fish Moor Reservoir," must be sent in, addressed to "The Chairman of the Company," not later than the 5th June.

BRIDGES.

WORCESTER.—For the construction of a brick bridge and other work near Martley, Worcester-shire. Plans, &c., with Henry Rowe, County Surveyor, 17 Foregate Street, Worcester, where tenders, under seal, and properly endorsed, are to be delivered (free of cost) on or before the 24th inst.

POLICE STATIONS.

SIMDMOUTH.—For the erection of a police station, &c., at Sidmouth, Devonshire. Plans, &c., with Henry Ford, Clerk of the Peace, Castle of Exeter, and at the office of Messrs. Radford and Williams, Clerks to the Justices, Sidmouth. Sealed tenders, endorsed "Tender for Sidmouth Police Station," to be sent to Mr. Ford, on or before the 3rd June.

MALT OFFICE.

BURTON-ON-TRENT.—For the erection of a new malt office, with barley and malt stores, for the London and Colonial Company, at Burton-on-Trent. Plans, &c., to be seen at the office of Mr. Robert Grace, architect, Burton-on-Trent, to the 25rd inst.; tenders to be delivered on the 24th.

VESTRY HOUSE AND OFFICES.

FOOTSCRAY, KENT.—For the repairing and partly rebuilding the vestry house and offices at Footscray, in Kent. Tenders to be delivered on or before the 26th of May, addressed to the Rev. C. Buck, Footscray Rectory.

MODEL COTTAGES.

ERITH.—For the erection of two pairs of model cottages, and for certain alterations to the estate office, at Belvedere, Erith, Kent, for Sir Culling E. Eardley, Bart. Tenders to be delivered to Messrs. Hatherson and Pite, Bloomsbury Square, London, on the 24th inst.

WAREHOUSES.

WIGAN.—For the construction of new warehouses at Wigan, for the London and North-Western Railway Company. Particulars to be obtained of the Company's engineer, at Lancaster, on and after the 26th instant.

SEWERS.

NOTTINGHAM.—For the construction and carrying out of a low level river Leen culvert, and intercepting sewer from the Cok-hole in Finkhill Street, near the Water Works weir. Plans and specifications to be seen at the office of the Corporation Surveyor, Mr. Turbotton, and tenders received up to the 26th inst.

DRAINAGE WORKS AND STREET IMPROVEMENTS.

GRIMSBY, LINCOLNSHIRE.—For the erection of the following works:—Contract No. 1. Works of drainage. For the formation of 4,000 yards lineal of glazed pipe-drains, from 8 to 18 inches diameter, with outfall sluice, penstock, and other appliances.

Contract No. 2. Works of Street Improvement: comprising about 1,500 yards super of Yorkshire stone flagging, and 14,500 yards lineal of kerbing to footways; 17,950 yards lineal of flagging, and dwarf kerbing to channels, and 425 yards super of pitching to crossings. Plans, sections, and specifications, &c., may be seen at the Office of Mr. Joseph Maughan, Surveyor to the Local Board of Health, in Haven Street, Grimsby, until Saturday, 31st May instant, on which day Tenders for either or both of the Contracts must be delivered at the Office of the Clerk to the Local Board.

GRANITE.

BRENTFORD.—For 600 tons of hard Guernsey Granite for the Union Workhouse, Isleworth. Tenders to be sent on to Mr. Ruston, Clerk of the Guardians, on or before Tuesday, the 27th inst.

IRONMONGERY.

INDIA.—For the supply of Ironmongery for the Director General of Stores for India. Particulars may be obtained at the India Store Office, Cannon Row, Westminster, and tenders received up to the 2nd of June.

FLINTS.

MORTLAKE.—To send to the Surveyor of Highways, Mortlake, Surrey, the price per cubic yard at which Broken Flints can be delivered at the Ship Dock, Mortlake.

REPAIRS AND PAINTERS' WORK.

KENSINGTON.—For Sundry Repairs and Painters' Works to be done to the Vestry Hall, High Street, Kensington. Particulars of Mr. Broadbridge, Surveyor, at the Vestry Hall, and tenders received up to the 6th June.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

Received.—T. R. S., G. T. M., W. W., G. C. H., J. W. T., S. T., G. W., T. M. C., E. A., H. L., E. W. C., W. H. B. (declined), J. H. (next week), Architect, B. D. & Co., J. P., R. H. G. (annot promise), Prof. K., A. M., J. L. C. Received.—The "Church Floral Calendar," "Passages from Modern English Poets," "Sketches from France and Italy." From Day & Co. These will be noticed in a future number of the BUILDING NEWS.

In our description of a new plan for building bridges, in our last number, we should have stated Mr. Sedley of 210 Regent Street, instead of 210 Oxford Street.

**** NOTICE.**—The BUILDING NEWS is now published at 166 Fleet Street, where all Communications and Advertisements should be addressed.

THE CHAPTER HOUSE, WESTMINSTER ABBEY.

DOWN at Westminster, east of the Abbey cloisters, from which it may be approached by a vestibule (passing a room known as the Chapel of St. Blaise on the left), is an octagonal apartment, some sixty feet in diameter; to the ordinary visitor a glance inside the doorway would serve to satisfy curiosity, and he would probably leave with the impression that it had been erected to serve the purpose of a store-room; the walls are partially hidden by great, clumsy, and now nearly empty presses; there is a wooden staircase leading to a gallery; a rough ceiling that does no more than enclose the upper part; and an ordinary wooden floor. True, in the centre of the room there is a Purbeck marble pillar, but the lower part has been long hidden, and the vaulting ribs which spring from the caps pass abruptly through the ceiling. In fact, there is nothing about the general appearance of the room to lead the casual observer to suspect that it is anything else besides a badly-planned storehouse.

But this room—it is the Chapter House of the Cathedral, though long known as a "Record Office"—was begun to be built as early as the year 1245, and was, when completed, a work of extreme beauty; the Chapter House at Salisbury, better preserved, was built in imitation of it, but, says Mr. Scott, it would have "yielded the palm to its prototype at Westminster."

It has been Mr. G. G. Scott's good fortune to have discovered the value of this architectural gem, and he has set himself earnestly to work to secure a wide appreciation of the importance of preserving, in a restored condition, a fine work of art. Few imbued with a love of art, perhaps none besides Mr. Scott, have had an opportunity of examining in detail the various portions of the structure. The plan, as we have before said, is octagonal: the diameter about sixty feet, and the height, to the crown of the vaulting, about fifty-four feet. It may be noticed, that the diameter agrees very nearly with that of the chapter houses at York, Salisbury, and Lincoln; Mr. Scott suggests, that probably the polygons were in each case inscribed in a circle of about sixty feet diameter, measured perhaps in the clear of the vaulting-shafts. The central pillar, about thirty-five feet high, is of Purbeck marble, and on plan it has a central shaft surrounded by eight smaller shafts, with three moulded bands; the capitals, of marble, are richly carved. The windows are almost entirely walled up, but the design has been preserved, owing to the fortunate accident that the tracery was repeated on one side of the octagon attached to the transept of the church; they had four lights, and were finely proportioned. The window over the doorway, however, being, in consequence of its position, shorter than the others, had five lights, and these, on examination, were found to have been walled up with stone, instead of brick, as was the case with the others; it turned out eventually that this stone filling-in consisted entirely of the moulded ribs of the lost vaulting, "carefully packed like wine-bottles in a bin, with the moulded sides inwards." Below the window, sufficient has been traced to show that the walls were occupied by arched stalls, with trefoiled heads, the five which occupy the eastern side being of superior richness and more deeply recessed. The capitals are of Purbeck marble, and the spandrels are diapered, usually of the pattern common in the church, but in one case exhibiting a conventual representation of roses. The walls within the arcade are covered with paintings, which are thought to represent our Lord exhibiting the mysteries of the Redemption to the heavenly host. Sir Charles Eastlake and Mr. Scott are both of opinion, that this work was executed about the middle of the fourteenth century. Paintings of later date of inferior character occur in other parts of the arcade. The doorway was originally double, with a central pillar and a circle in the head, now almost entirely destroyed; the jambs contain on the outer side four Purbeck marble shafts, with marble caps richly carved, the spaces between the shafts being foliated; the arch contains two orders of mouldings, both enriched; one on either side contains a series of figures in the intervals of the foliage. Unfortunately this fine doorway, which still bears distinct traces of colour and gold, was not long since rapidly crumbling to pieces; the surface being so disintegrated that it was not ventured to clean it by any rougher process than that of blowing away the dust by a pair of bellows with a flexible tube and nozzle. After this was done, under Mr. Scott's direction, a solution was injected from a finely perforated rose syringe, so as not to disturb the crumbling surface. The floor is the only part of this interesting structure which remains perfect, and it is nearly so, having been protected by the wooden floor. It is, perhaps, the finest specimen of old work of the kind now existing. Of the exterior unfortunately but little remains, but Mr. Scott thinks, that although at first its restoration seemed to be extremely difficult, subsequent examination proved that such was really not the case, and that the whole of the exterior could be restored, with the exception of the parapets and pinnacles, in accordance with the original design.

A meeting, convened by the Dean of Westminster, has been held in the Chapter House for the purpose of taking into consideration what steps are most desirable for its restoration, and we earnestly

hope that a monument of past ages, interesting, not only on account of its antiquity, but also, and chiefly, on account of its architectural beauties, as this is, will not be allowed to remain in its present state, so disgraceful to those whose care should be its preservation, a day longer than is required by the preparations for its proper restoration. If there was any doubt about the possibility of its being restored to its former design in all its integrity—if there was any suspicion that money was about to be expended in the erection of a new Chapter House of modern design, we should hesitate before assisting to such a course, and possibly might see reasons for objecting to it altogether; but Mr. Scott tells us distinctly that, not only the interior, but the exterior also, where the task looks far more discouraging, can be restored "in accordance with the original design." There is no question, therefore, as to the nature of the restoration we can have; there should be none as to the desirability of effecting the work, and there is no doubt as to the architect to whom it should be entrusted. The only difficulty that crops up is an uncertainty as to who is to pay for it?

Lord Ashburton, who occupied the chair at the late meeting, of course saw this difficulty, but it is not clear that he was also able to see a way out of it. If we lived under a despotic government, he said, we should probably see that the Chapter House would be restored by the edict of the reigning monarch; as it is, the only course that suggested itself to his lordship's mind, was "to lay the case before the public, in order that if, at any future period, they should find a government willing to propose a measure of restoration, it should have such a support from without, as should enable it to carry its measures through Parliament;" and meantime the building is to go on crumbling to pieces! A suggestion has been offered, that application should be made to the Ecclesiastical Commissioners; but the Chapter House is public property, and the Commissioners cannot deviate from the provisions of the Act under which the Commission is appointed. It seems to be understood generally, that it is of no use to ask Parliament for assistance at present, but that if a goodly proportion of the required amount be collected by public subscription, the House of Commons might consent to grant a vote in aid.

If the Chapter House is national property,—and it is so,—we contend that, supposing it to be desirable to restore it, the duty of providing funds for the purpose, and that at once, devolves upon the guardians of the public purse. There may be some who care sufficiently little for art as to object to the very small proportion which in such a way they would contribute, but there are also many who care a great deal for art, whose end is the bettering of our natures, and these it is not fair to ask alone to undertake a work in which, as it is for all, all should join.

The French have restored the Sainte Chapelle, and it is one of the places which all visitors to Paris go to see. Our Chapter House at Westminster, restored, would be a finer building than that at Paris, in which there are certain errors with regard to the colouring that we should do well to avoid; and yet it is to be allowed to crumble away for a few more years, until the last trace of its former beauty has disappeared; and that because, while spending hundreds of thousands of pounds in wanton waste, we are told that the nation cannot afford the twenty or thirty thousand pounds required to transmit to future ages a work which contains the very spirit of our earliest English architectural art.

The meeting on Saturday, which included Mr. Beresford Hope, Mr. Tite, Mr. Scott, Mr. Clarke and others, passed a resolution, "That this meeting regrets the ruinous condition of a building so interesting, both as an historical monument, and on account of its original architectural beauties, as the Chapter House at Westminster." We quite agree with Mr. Cochrane, who pointed out that the resolution stated that the ruinous condition of the building was to be regretted, whereas we ought to look upon such a state of things with a feeling of shame. He said truly, that it is a disgrace to the country, that our public monuments are allowed to fall into decay. That foreigners make severe criticisms upon our public buildings, and that such criticisms are well grounded. The meeting was further impressed, "with the desirableness of bringing the question of the restoration of the Chapter House under the consideration of Her Majesty's Government," and it was also determined that a committee should be formed to nominate a deputation to the Chancellor of the Exchequer, for the purpose of presenting a memorial to the Treasury, and for taking such other steps as would promote the objects of the meeting.

It is quite time that the parsimonious and false economy with which matters of art are dealt by the governing powers should cease, and we trust that for once the subject may be looked upon in an enlightened spirit; that money will be freely granted for the work of restoration, and at once; and that we shall not have to recur to the still crumbling ruins of the once beautiful Chapter House of Westminster Abbey.

THE ORDNANCE SURVEY.

WE lately took occasion to remark upon the importance to the country of its possessing an accurate reflex, on paper, of the peculiar geographical and topographical characteristics which distinguish it. It is unnecessary to urge this point further, because all who pay any attention whatever to the subject, cannot fail to admit the position we have assumed for the Ordnance Survey. The only point upon which difference of opinion may legitimately exist in reference to the subject, seems to us to be the scales to which the maps resulting from the Survey should be drawn. This point has, indeed, been discussed by Commissions and Committees, until the question, instead of being solved, has become more complex. The Select Committee of the House of Commons, appointed on the 3rd of March last, to enquire into the expediency of extending the Cadastral Survey to those portions of the United Kingdom which had previously been surveyed upon the scale of one inch to the mile only, have now reported in favour of that extension, and it remains for the House of Commons to give effect to, or reject the Committee's report.

In support of the view which the Committee of 1862 enunciate, they state that the advantages of a cadastral map in transactions affecting land, as between landlord and tenant, are self-evident. A cadastral Survey, while it provides facilities for the transfer of land from one proprietor to another, also describes the acreage of every inclosure. It provides for recording on the plans all improvements which the tenant may make, and for which he may claim remuneration on leaving his farm. It indicates the levels also which are necessary for the improvement of the land by drainage, and it can be used for marking the exact positions of the drains. The aggregate of farms depicted on the cadastral map makes up the whole county, and the advantages, therefore, are not only local, but national. The question of the improvement of the productive power of the land affects the whole community. And all experience tells us that, whether for the improvement of lands already under imperfect cultivation, or for the reclaiming of waste lands, or the reclaiming of land from the sea, the first demand is an accurate map with levels, on which all the work contemplated to be made can be distinctly and clearly laid out.

The advantages which the cadastral plan affords to those who are carrying on engineering works, such as fortifications, hydrographical surveys, geological surveys, railway surveys, and drainage, are not less important than those which it affords to the transfer and management of lands.

The Committee summoned, in support of their statements in regard to these last-named considerations, several eminent witnesses, dead as well as living. The Duke of Wellington has expressed himself strongly on the advantages which would accrue, in a military point of view, from the publication of large-sized plans of the country. He pronounced the scale of six inches to the mile, to be the smallest size which would give really useful information to military engineers. Surveys for military purposes are, in fact, frequently required, and more especially now that public attention has been turned to the subject of the defences of our dock-yards, and other public works. The National Defence Commission has lately ordered a considerable number of surveys for the use of that Commission. These have all been conducted on the scale of $\frac{1}{62500}$, and are so made, that if Parliament should decide to proceed with the general survey of England on the same scale, they will square with that general survey. They are based on the same triangulation, and carried out in the same careful way that the cadastral Survey would require.

As regards hydrographical surveys, the very strongest testimony has been given by many distinguished officers of the navy in favour of the large scale, or cadastral plan. These officers are unanimous in expressing first the great value of the Ordnance Maps to the coast survey. Secondly, that the maps on the 6-inch scale, from their ample and clear details, furnish the surveyor, almost at a glance, with a general knowledge of the configuration and features of the coast, the high and low water-line, &c. Thirdly, they supply such minute and accurate data, that the surveyor in his off-shore soundings is often enabled to make use of some mill, house, or other conspicuous object on the shore, and thus to fix his position; the map being his infallible guide, although the trigonometric points are covered by clouds, or obscured by mists. Many other reasons are adduced in the same quarter by the naval officers referred to, and they are supported unreservedly by Mr. Washington, the Government hydrographer. Sir Roderick I. Murchison bears testimony to the value of maps on a large scale in the Geological Survey. He asserts that Professor Ramsay and his assistants, having been engaged in a geological survey of Haddingtonshire, had found that the 6-inch maps with contours had afforded them great facilities for the mere exact completion of their work.

Touching coast cliffs, or rocky shores, which so often give the geologist a key to the real framework of the adjacent inland tracts, all the physical features are so minutely laid down that every curve or

break in the strata can be accurately noted on a 6-inch map. In the interior of such a country, provided with a cadastral map, it is plain that the geologist may insert on it in writing all descriptive lithological details pertaining to every stone, quarry, or natural feature. If he happen to be working in a track of coal or iron, he may in the same way delineate the precise outcrops of the respective beds or bands of these minerals, and insert also on the map much valuable local information. Sir Henry James states, that there are about 13,000 miles of railway in the United Kingdom, the surveys for which cost not less than £250,000, and had a National Survey existed prior to their formation, at least £200,000 of this would have been saved.

In this opinion Sir Henry is strongly fortified by the evidence of the late distinguished engineer, Mr. Locke, who spoke frequently of the great saving which would be effected by the possession of an accurate government map. This would, he said, enable an engineer to get a good idea of the country to be traversed at once, and without trusting to personal observation. Sir John McNeill has expressed similar opinions. The 6-inch scale, he said, "enabled you to lay out the lines on the maps for either railways, canals, or harbours, for the purpose of lodging in the different offices, and also in the offices of the clerks of the peace on the scale required by the standing orders." Sir John added, that he had actually laid out by the Ordnance Maps more than 2,000 miles of railway, and that experience led him to give a most decided preference to those on the 6-inch scale. He believes that the saving of expense to the parties who employed him on these occasions by using the Ordnance Maps was not less than £10,000.

In the matter of drainage, too, equally satisfactory testimony has been adduced before Commissioners or Committees, and there can be little doubt, we are sure, in the minds of our readers as to the advantage of cadastral maps over those on a small scale. We would scarcely advocate a uniformly large scale for towns, parishes, and counties, however; it might be considered whether in those cases different scales might not be adopted.

Most of the states of Europe have government surveys on a large scale. In some countries these are treated as military maps, and in others portions of the survey are sold at a low price to the public. Austria, Bavaria, Belgium, Denmark, France, Holland, Prussia, and Russia are surveyed in whole or in part, either on the scale of 25:344 inches to the mile, which gives one inch to each acre, or on that of 13:680 inches to a mile, excepting Denmark, which is surveyed partly on the scale of 15:84 inches, and Russia, which is partially surveyed on the scale of $7\frac{1}{2}$ to $3\frac{1}{4}$ inches. Sardinia has decided on a cadastral survey of 42:24 inches to the mile, whilst Wurtemberg has completed and published a survey to the scale of 50:688 inches to the mile.

Some of the countries referred to have undoubtedly carried matters to extremes; but with the experience already gained, and the clearly given opinions of practical and professional men, it seems certain that we cannot err in regard to the best mode of proceeding. The Committee which has just furnished its report to the House state, that they regard it "as a settled point, that for the purposes of this enquiry the term 'cadastral' means a survey on the scale of 25:344 of lineal measure of the ground, from which plans on that or any smaller scale can be drawn."

There is no doubt that the Committee did well in accepting this arrangement as a fixed point, for the scale in question offers many advantages in the primary survey, and many facilities for reduction afterwards to any scale which may be desired for particular localities.

During our recent visit to the Ordnance Survey Office, at Southampton, we were struck with the ingenious and yet simple means by which plans were reduced. Photography of course is enlisted by the operators in this case, and marvellously well does it perform its task. It does not err, as skilled labour of the most superior kind not unfrequently does, but gives instantaneous and truthful results.

Some witnesses suggested to the Committee in question that the surveys should be made, but the results not published. They recommend that the original map should be deposited in some accessible place, and that persons desirous to obtain copies should be allowed to do so on payment of a certain fee. The Committee express their belief, nevertheless, and in that belief we heartily concur, that taking the average of the whole kingdom, a sufficient number of copies will be sold to defray the expenses of publication. In truth this idea seems to be justified by facts. When the manuscript plan of the ground is completed, the expense of preparing plans on the 25-inch and 6-inch scale respectively is as follows:—

One sheet on the 25-inch scale contains 960 acres, one sheet on the 6-inch scale, 15,630 acres; one sheet, therefore, on the 6-inch scale represents exactly the same area of ground as 16 sheets on the 25-inch scale. The cost of producing one sheet on the 25-inch scale is computed to be £4. The cost of producing one sheet on the 6-inch scale is sixteen times £4 — £64. In other words, the cost of production is the same on both scales for an equal area. The

25-inch plans are transferred to zinc or stone — zinc being principally, if not entirely, used at present, and the 6-inch plans are engraved on copper, after being reduced by photography. The difference of price between one sheet on the 25-inch scale, and one on the 6-inch scale, is owing to the greater amount of skilled labour expended on the copper-plate engraving, as compared with the zincographic process.

When once the Cadastral Survey is completed, revision would be needed, say, once in fourteen years. This would cost less than the rate of £10,000 per annum, an amount which it is fair to suppose would be covered by the profit on the sale of the maps.

It is difficult to imagine that any objection will be raised in the House of Commons to the carrying out in its entirety the Cadastral Survey of England. In every way it will be advantageous to have it made, and that speedily. There may have been room for two opinions amongst our representatives as to the propriety of transporting the Natural History Department of the British Museum to South Kensington, at a cost to the nation of £600,000 or £700,000, but there can scarcely be so upon the propriety of proceeding with the Ordnance Survey.

When completed, the Ordnance Maps will form a picture of the country, as far above the value of the renowned Domesday Book of William the Norman, as is the civilisation and scientific knowledge of the subjects of Queen Victoria above those of the subjects of the Conqueror. In short, it will be a work worthy the age and the nation.

ABRIDGEMENTS OF THE SPECIFICATIONS RELATING TO BRICKS AND TILES.

(PRINTED BY ORDER OF THE COMMISSIONERS OF PATENTS.)

THIS volume belongs to a series of similar collections of abstracts which the Commissioners of Patents have been publishing for some time back, and which now includes a considerable number of volumes, each on a distinct subject. It may be desirable to give some account of the circumstances which led to these publications, or, in other words, of the labours of the Commissioners during past years, before noticing the particular volume now under consideration.

Most of our readers are aware of the fact that, among the conditions necessary for obtaining Letters Patent to secure an invention, it is essential that a specification of the nature of the invention and the mode of putting it into operation shall be lodged in the Patent Office. This has been, more or less, the custom from near the time when the very first patents were granted, and as the specification, with its accompanying drawings, forms the basis upon which any supposed infringement of the invention is examined and disposed of in a court of law, it is clear that a comprehensive and accurate description of the nature of each invention must be embodied in each specification, in order to render the document available. To a great extent this is the case, and hence it can be easily understood that a body of valuable information has been gradually accumulating in the storehouse of patents; information valuable as embodying a history of discovery, invention, and art in this country, as containing descriptions of innumerable inventions the patents for which have expired, and which it is open to all the world to appropriate, and as showing to inventors in any particular branch the nature of all such inventions as have already received patents, so as to enable them, if intending to become patentees, to see whether or not their inventions have been forestalled.

The actual examination of these numerous and voluminous documents, entered numerically in books, and stowed away in several very inappropriate receptacles, was, however, a matter virtually impossible without some guide or clue to them, and this clue was provided by the energy and perseverance of Mr. Bennet Woodcroft, now Superintendent of Specifications, &c., under the Commissioners, and formerly Professor of Mechanics at London University College. He prepared three catalogues, or indices to the specifications, arranged with the greatest care, patience, and skill, of which one was an alphabetical index, a second a subject-matter index, and the third a reference index, giving a reference to the passages in scientific periodicals in which each invention down to a certain date was described or elucidated.

This step, in itself of great importance, was followed by the introduction of the custom of printing all the specifications as the patents were taken out, and engraving the accompanying drawings; and when this had been found to be appreciated by inventors and the public, it was decided to print the specifications of the earlier patents back to the very commencement. This has been in progress for a considerable number of years, and is either actually accomplished, or is on the eve of completion.

The specifications on any one subject, however, form a numerous and consequently a costly series; and, notwithstanding the facilities for

consulting the complete printed series at the library in the Patent Office, and the numerous free libraries, the establishment of which has been promoted by the Commissioners, it has been felt that in many cases inventors were not able fully to realise the advantages proposed for them; any entire series of patents being too costly for purchase, and the short descriptions in the indices not being sufficiently detailed to indicate what individual patents bear upon any one point. The happy idea was therefore conceived of publishing abstracts of the specifications in classified series, these abstracts leaving no essential point unnoticed, but conveying as briefly as possible such information as will give an exact idea of the scope of the specification itself, and of such of its details as form novel or distinctive features.

The preparation and publication of this series of abstracts is now going on, under the superintendence of Mr. Woodcroft, and the first series published was one which related to inventions of a nature to bear more or less directly on building operations, namely, those concerning drain tiles; this has been followed by various series on various important subjects, such for example as steam navigation, steam culture, fire-arms, &c., and lately by the volume before us, which is the second of those that more particularly concern the builder.

Bricks and tiles seem simple in their nature, their materials, and their manufacture, and yet we find that, up to the end of the year 1860, there had been somewhat more than 500 patents taken out for inventions of which they were the subject. Of these inventions, some relate to new materials; others to new shapes, forms, or sizes; others to methods of tempering the raw materials, or drying and burning the manufactured articles; and others, these being the most numerous of all, to various inventions for the manufacture of bricks and tiles by machinery. The book, like all the other series of abstracts, will be almost indispensable to inventors of bricks or brick machinery; it will also be very useful to manufacturers, and even to architects and builders, as showing them what methods of manufacture have been tried, and what forms, patterns, sizes, and qualities of bricks have been devised. It is hardly, perhaps, necessary to add, that the series will not do more than this, it is not intended to guide its readers to a discrimination between those patents which have proved to be of practical value, and those which are not at present being worked; in fact, it would be almost impossible to procure such information complete, and unfair to pretend to give it, except in a complete form.

We may add, that to these specifications which, arranged in chronological order, form something like a history of bricks and brick-making in this country, from the year 1619 to the present day, there is prefixed a brief but comprehensive introduction, carrying the reader back to the earliest known accounts of the manufacture and use of bricks and tiles, and tracing the history of their employment, and of the modifications which they have received from that time downwards; of this introduction our readers have had an opportunity of judging for themselves in another part of our columns.

It is to be hoped that this series will be speedily followed by others connected with building, such, for instance, as inventions connected with mortars and cements, heating and ventilation, and new materials and contrivances of various descriptions; and in fact, some such promise is held out by Mr. Woodcroft in his preface, in which he says:—"A limited number of the present Abridgements relate to improvements in building contrivances or materials which will form the subjects of distinct series; they were, however, necessarily included here, because some portion of them refer to bricks or tiles."

INTERNATIONAL EXHIBITION.

THE PICTURE GALLERIES.

HAVING mentioned in the previous number several pictures contributed by the foreign schools to which we can produce no equals in the same style of art, we will now proceed to select from the works of the English school such pictures as we think cannot be equalled by those from the continent. First among the fathers of British art, stands Hogarth—not only original in choice of subjects as a painter, but in truth the first openly declared foe to vice amongst us; also the first who devoted his talents to mitigate cruelty inflicted upon animals. His works upon those subjects have never been approached either at home or abroad. His imitators in England were few, and merely resembled him near enough to make his merits by the comparison more conspicuous. Collett was perhaps the most successful of them, but his attempts show more the ambition to be a painter, than the possession of the pictorial gift so indispensable to make one—a gift which was so remarkably manifested in Hogarth. Like all self-taught men he entertained strong opinions upon the art he had acquired. He published those opinions in his well-known book entitled "The Analysis of Beauty," and such were his natural abilities, and so practical was the manner in which he employed them, that after the first part of his book had been revised by a literary friend, Hogarth had

watched the operation so closely, and had applied all that he learned from it so cleverly, that when the manuscript of the second part was submitted to the same friend, he found scarcely a word to change, or a sentence to alter. It was no doubt the application of his common sense to the treatment of his subjects, that induced him to adopt a low tone of colour in his pictures, where expression and character were his principal intention; and that that practice was sound, we may see in this Exhibition, by looking at the small interior and domestic subjects by Madou, of Belgium, and those by Bles, the *genre* painter of Holland. For this apparent want of colouring, Hogarth has been censured by English critics; but if he has sinned in that respect, it has been committed in most excellent company; for many others have adopted the same method of colouring, besides those we have mentioned. Hogarth thus stands entirely alone in the choice of his subjects, and especially so in the systematic manner in which he attempted to reform the morals and check the cruelties of his own time. Generally excellent as the light is in the large rooms of these galleries, it is to be regretted that his pictures could not have been better placed. Most of them are hung too low, and nearly all are hidden in a comparatively dark corner of the room.

The real founder, however, of the school of British art was indisputably Sir Joshua Reynolds; and although there have been portrait painters in all countries, we think from no part of the world can pictures equal to his be seen, and in which the same grace, delicacy of expression, and elegant arrangement can be found; but the superiority possessed by Reynolds over all other painters of portraits consists in this:—Besides seizing the character and expression of his sitter, so that all who knew him should recognise the likeness at the first glance, he at the same time produced a picture that all the world could admire as a work of art, without their even wishing to know for whom the portrait was intended. It is in this that Sir Joshua is unrivalled by any work in the present Exhibition or elsewhere. Gainsborough stands alone both as a landscape and a portrait painter. The celebrated "Blue Boy" bids a bold defiance to all comers. It is an interesting fact that this, the finest picture of the kind ever painted, should be the result of antagonism to a rival and a perversion of one of his rules. In short, a mistake. Sir Joshua, in one of his celebrated "Discourses," laid it down that if blue he made the key colour to a picture the general effect must necessarily be cold. When he wrote that, he had in his mind a composition consisting of several figures, in which, if the principal figure wore a blue dress, that colour, to connect him or her with the rest of the subject, must reappear in various parts of the subject; not only so, but if the blue, being a cold colour, were to be maintained as the key colour, all the warm tints must be subordinated to it. Hence there would be an undue prevalence of cold colour and of warm colour toned down to agree with it; and therefore, in comparison with other pictures painted on a different principle, a cold effect would be the consequence. Gainsborough, disliking Sir Joshua too much, and being too eager to prove him wrong, without inquiring into the true meaning of the rule, painted a picture of one figure, not several; that figure he dressed in blue satin—not contemplated by Sir Joshua—surrounded by low-toned warm colour, as a contrast, not an accordance relieved the whole with deep greys, which, with the sudden and dark shadows of the satin, and its equally sudden and bright lights, produced an effect, not of extended harmony, but of a brilliant and dashing piece of *chiaro-oscuro*, in which the blue was considered as the local colour, rather than as the key to the whole. If, however, all the perversions of the rules established by Sir Joshua Reynolds had been attended with results so splendid and so honourable to English art, they could well claim the forgiveness that poor Gainsborough on his death-bed asked of the man he had so opposed and misrepresented during the greater part of his life.

His attempt to render Sir Joshua ridiculous in this instance was as reasonable as if it were endeavoured to be proved that the plan of a general battle were absurd, by showing what a single individual could do under extraordinary and peculiar circumstances. Besides the "Blue Boy," "The Girl and Pigs," and the "Girl going to the Spring," for rural poetry in feeling and treatment, we know not the work of any foreign master in the present Exhibition, or out of it, that can for a moment be compared with either of them, or with his lovely and famous picture known as "The Cottage Door."

Morland, who was nobody's enemy but his own, can also, in rustic sentiment and painter-like treatment, challenge any foreign competitor. He was unfortunately his own enemy, both in a moral and a worldly sense, and by the latter his fame as an artist has seriously suffered, for few know the delicacy of his style in early life, or the depth and power of his pencil during his meridian, and too many know only the slovenly and hasty smears and scrawls for bread in his latter days. The pictures by him in this Exhibition will no doubt redeem his fame, but he is not represented as he might have been. The "Landscape and Gipsies" is both fine in composition, uniformity of tone, and facile execution, which is so charming in him when it is not carried to excess. No painter ever excelled Morland in rendering the leafy character of wood scenery. No. 103 is an admirable example of this style of painting; the arrangement of the parts is also fine, and the general tone of the colouring will illustrate our remarks on his unity of effect, and the group of sheep under a glass that hangs near to it will show the delicacy and breadth with which Morland could paint in his best time.

The classical style of Wilson does not stand so distinctly apart from several foreign painters who could be mentioned, but in all his compositions of this kind it will be seen that he sustained the feeling throughout with both

taste and power, and in his pictures of a less pretentious character, as the "River Dee" and the "Frith of Forth," in the present exhibition, his love of home and rural scenery is charmingly displayed. It is in this home feeling that English landscape painters excel those on the Continent. The latter, although they are excellent as works of art, and elevated rather above the reality into a kind of rural sentiment, seem to be painted by a stranger; while the landscapes in England by Englishmen have an air of homeliness about them very congenial to the national mind. Thus the classical compositions by Wilson have not so many general admirers as his views at home taken from known localities, because we have no natural sympathy with them. It is the same with the pictures of "Old" Crome now exhibited, while we admire the firmness and vigorous effect which they present, they remind us too much of Hobbins, to produce the full impression of home to give all the pleasure they might. His view of "Moushold Heath," although barren in subject, is more in accordance with our feelings, because it suggests nothing but the reality, and that reality evidently in England. There are, however, few foreign painters of out-door scenery can equal Crome as a landscape painter. Of the pictures by Calcott we may well be proud, for, besides that congenial aspect which induces us to sympathise with them, they have a fine expanse of atmosphere, great unity and breadth of tone, besides being scientifically composed. We would direct attention particularly to a "Sea Piece," and "Shipping on the Thames." The pictures want cleaning to show their true atmosphere. They are badly placed in the gallery for exaggerating their tawny appearance, in consequence of having the ventilators close below them, which, when open, allow the clear daylight to be seen, and rendered more brilliant by contrast with the black and positive forms of the iron-work; and not only is the yellow varnish upon them increased in intensity, but the eye of the spectator is dazzled by the vividness of the daylight, and at such times it is quite impossible for these fine English pictures to be seen at all. Between the works of Wilson and Calcott is a charming little picture of a "Farm Yard," by a native artist little known, H. Walter; but for delicacy of feeling and appropriate sentiment in the treatment, few of the foreign painters of the same subjects can be brought into comparison with it. Benington's "Venice," and his other pictures in the Exhibition, do credit to the English school. The paintings by Nasmyth, although too evidently founded on the old masters to be strictly native, still he has applied the materials he obtained from foreign sources with so much judgement, taste, and skill, that he may be mentioned in connection with the leading artists of the British school; some of his pictures are very delightful for the purity of their atmosphere, and the spirit with which they are touched.

Constable, as an original genius, besides having given the tone of French landscape painting, stands unrivalled, both by them and his own countrymen. Time has done him the justice which his contemporaries refused, when his pictures, fresh from the easel, appeared speckled all over with spots of light colour, which he said twenty years would tone down. Visitors may now see how the prediction of the painter has been verified. In "The Hay Wain," we have the perfection of landscape painting of the most rural kind. "Salisbury Cathedral" is another fine example of his style; "Flatford Mill" also; but the "Opening of Waterloo Bridge" would require a lengthened description to make all its pictorial beauties intelligible to the uninitiated. It will be sufficient at present to direct attention to the manner in which the sentiment of the subject has been sustained throughout. It is a scene of pomp and gaiety. In the foreground are state barges, with their gilded sides. On the platform above the cabin are crowds of people, surrounded by numerous banners waving and fluttering in the wind. It is worth while to examine and note the original method of producing that effect, with the appearance of motion given to the state barge and all it contains, as if passing before the eye. Neither Baekhuysen nor Vandervelde ever thought of making the attempt which Constable has here carried out so successfully. Every part of the picture is in motion. The water is broken into little dancing wavelets by the craft in the foreground, the sun gleams out through the somewhat showery-looking clouds, and the signal gun from the bridge in the distance sends forth its wreath of white smoke, which, while it is suggestive of the subject, forms the central and key white of the whole composition, which, when viewed as a whole, presents an aspect so elegant and brilliant, that it may safely defy foreign competition. In the "Cenotaph at Cole-Orton, in Memory of Sir Joshua Reynolds," Constable has put forth all the solemn and quiet graces of his pencil, and has, if possible, exceeded the powers of the marble, by the refined feeling in which he has treated it, in paying homage to the talents of the father of English art, and the first President of the Royal Academy.

We have not yet exhausted the list of English painters who can be advantageously compared with those of the Continent.

WORCESTER.—It has long been doubted that Worcester was a Roman station, but a recent discovery in Copenhagen Street there, has proved that it was. Remains of an ancient roadway, and the bases of two columns, standing about 7½ ft. from each other, have been found in digging the foundations for the new Police-Station, at the east site, eight or nine feet from the frontage of the present street, seven feet below the surface. The bases of the columns are of sandstone; the columns have been broken off. They were of rude workmanship, but their Roman type was unmistakable.

MANBY HALL.—We are informed that Manby Hall, one of the seats of the Earl of Yarborough, after a careful inspection by an architect, is doomed to demolition. The house is somewhat inconvenient and very ancient, having stood the test of time for several hundred years.

RESTORATION OF THE CHAPTER HOUSE OF WESTMINSTER ABBEY.

ON Saturday last, a meeting of noblemen and gentlemen, convened by the Very Rev. the Dean of Westminster, Dr. TRENCH, was held in the Chapter House of Westminster Abbey, to take into consideration the steps desirable to call public attention to the ruinous condition of that beautiful building, with a view to its restoration.

The meeting, although a preliminary one, was very numerously attended, and amongst the noblemen and gentlemen present we noticed: Lord Ashburton, Lord Stratford de Redcliffe, Lord Taunton, Lord Talbot de Malahide, the Bishop of Oxford, the Bishop of St. Andrew's, the Bishop of St. David's, the Dean of Westminster, the Dean of York, Sir William Heathcote, Bart., Sir David Dundas, M.P., Mr. Baillie Cochrane, M.P., Mr. Tite, M.P., Vice-Chancellor Sir William Page Wood, Mr. Hubbard, M.P., Mr. George Gilbert Scott, Mr. James Fergusson, Mr. Joseph Clarke, Mr. George Godwin, Mr. Charles Forster Hayward, Rev. Thomas Hugo, Mr. M. J. Lomax, Mr. T. Hayter Lewis, Mr. E. M. Barry, Mr. Beresford Hope, Rev. Mackenzie Wallace, Mr. Arthur Ashpitel, Mr. James Bell, Mr. Henry W. Sass, Mr. Bailey, Mr. J. H. Parker, Mr. Aekroyd, Mr. G. A. Sala, Rev. W. Scott, Rev. Benjamin Webb, Mr. Henry Reeve, Mr. Cooke, Mr. Knight Wilson, Mr. R. T. Cox, Mr. W. C. Cox, Mr. Martin Sharp, Mr. George Richmond, Mr. S. Tillet, Mr. D. Dasent, Mr. Dyce, &c.

On the motion of the Dean of Westminster, Lord Ashburton was called to the chair.

The CHAIRMAN, before opening the proceedings of the meeting, mentioned that he held in his hand a letter from the Duke of Buccleuch, high steward of Westminster, regretting exceedingly that he was not able to attend on the present occasion, and stating that he was quite ready to join in any proceedings likely to promote the object of the meeting. They had all reason to thank the Dean of Westminster for having called them together on that occasion; his pious zeal for the great monument left in his charge had extended to the Chapter House, which had for some centuries been withdrawn from the superintendence of the Church. They all of them knew that the Chapter House was built in the best time of Norman architecture, that it was, at a period when religion and civil government were more strictly united than now, taken by the crown for the meeting of the Houses of Parliament. It remained in that destination until the time of Edward VI.; it was then used as a Record Office, and it had gradually become defaced, as they now saw it was. It had been pronounced by Mr. Braidwood as unsuited to hold papers of value, owing to its liability to fire, and the question arose, to what purpose could it be applied, and whether it was to be a rubbish heap, or restored to its former beauty as a gem amidst the glorious monuments which either the piety of former ages, or the revival of art in our own day, had grouped about that spot. If they lived in France, they would only have to apply to some gentleman having influence at the Court, and then probably the Emperor would order, as he did in the case of Le Chapelle at Paris, the building to be completely restored. But they happened to live under a constitutional government, and a constitutional government has other modes of procedure. The Queen was almost powerless as to carrying out the object in view; the Government was almost powerless, for, to obtain funds, a proposition would have to be made by the Chancellor of the Exchequer or the Prime Minister to the House of Commons. It would, therefore, seem the most desirable thing to appeal to public opinion, and should the Government propose a measure for the restoration of the ancient building, they would then probably have a full and ready support from all the members of the House. Meanwhile, they might take another course, and it was for the meeting in its wisdom to decide what that course should be. The noble Lord concluded by calling on Mr. Scott to put the meeting in possession of the position of the building, and of the state of the various parts of it, which would enable him as he thought, to restore this monument exactly as it was in ancient times.

MR. GEORGE GILBERT SCOTT said, he had no doubt the great majority of the gentlemen present were gentlemen who had given a certain amount of attention, and many of them a great deal of attention, to the subject of mediæval art. To them, therefore, it would be no matter of surprise to be told what the Chapter House in which they were assembled once was. But if there were any present who had not made themselves cognisant with architecture and antiquarian matters, he thought it would be a matter of surprise to be informed, that the miserable place in which they were assembled, which appeared to be like something between a dissenting chapel and a warehouse, had been, and might be again, one of the most beautiful specimens of mediæval art. Everything, except the central column, was so hidden by the barbarous innovations which had been introduced, that no one could imagine the building was once one of so interesting and beautiful a character. The Abbey, which was built, not founded, by king Edward the Confessor, was commenced to be rebuilt by Henry III. in 1245, which was just the period when the earliest variety of pointed architecture was merging into the second or more mature form it passed through. Therefore, this part of the Abbey was not only a valuable specimen of ancient art, but one of the most valuable historical specimens, for this reason, that the style in which it was built was supposed to have been imported from France, but upon that point there was a controversy. Through the aid of Mr. Burt, he had got to know that the building was erected, or rather finished, in 1253, exactly the same date as that of French buildings of a similar character, which showed that we were not behind the French in buildings of that description. In 1253 it was almost the first of the finer specimens of octagonal

chapter houses; that at Lincoln preceded it by half a century, but it was not so fine in all its development. That at Salisbury was later, and the Chapter House of Westminster stood the first both in date and beauty. It was 60 ft. in diameter, the same as that at Lincoln, and it was established on the strictest system of mathematical proportions. He had spent several months in tracing out the original design, and he thought that, with the assistance of Mr. Burt, he had found guides and vestiges remaining, which would render it possible to restore every portion of the building with perfect certainty. (Hear, hear.) The roof had been of polished Purbeck marble, and the floor happily remained absolutely perfect, and was one of the finest specimens of an encaustic tile floor remaining; in fact, he did not think there was anything equal to it. As to the question of the stability of the building, the groining was taken down about the time of Sir Christopher Wren, because of its unsafe state, which led to a pier giving way on the western angle, and there was no doubt it was on account of the groining giving way. It was probable, therefore, that in the restoration of the Chapter House it would be requisite to restore the pier referred to. There was no doubt whatever, that the building might be made perfectly capable of carrying the weight of the vaulting. Externally the case was very different from that of the interior, but happily not so very different as at first might be imagined. Till they got to the parapet and the pinnacles, they could recover the original design. The whole of the interior could be restored, and the whole of the exterior, with the exception of the parapet and pinnacles, the construction of which must be guessed at, as much as possible, by reference to contemporaneous works. He then went into another question, how far the decayed mouldings in the interior ought to be renewed. And his opinion was, that where they were not so far decayed as to destroy their design, they should not be renewed, but have applied to them a hardening solution, carefully passing by degrees to renew where renewal was requisite; but wherever the original design existed it should not be interfered with beyond the application of a hardening process. He could give his strongest possible opinion that when properly restored, the Chapter House of Westminster Abbey would be one of the most interesting and exquisitely beautiful buildings this country possessed.

LORD STRATFORD DE REDCLIFFE said, the object of the meeting had been well explained to them by the noble President, and the statement which had been made by the illustrious architect, Mr. Scott, was such as to lead every one to see the importance of the building in which they were then assembled, and he was sure they were all happy to hear of the facilities afforded for its being restored to its original state. Of course there must be great difficulties in carrying it strictly into execution, but if he understood Mr. Scott properly, the main points of the building were capable of complete restoration without any great trouble. That being the case, any addition that might be required from the long lapse of time, was comparatively of little importance, and the interest which attached to such a building as the Chapter House of Westminster Abbey could not be overlooked by any gentleman. We owed to those who had gone before us, to neglect no opportunity of preserving and restoring the buildings they had left us. There were circumstances connected with the building in which they were assembled, which commended it to their careful consideration. The high style of architecture of the building showed the object for which it was constructed, and when they remembered the power of the clergy at the time of its construction, they might well imagine the important discussions which frequently took place in the Chapter House. And then the building had been the House of Parliament, and no doubt, and even according to tradition, the voice of eloquence and of patriotism were frequently raised in that room, even to the interruption of the religious services in the neighbouring cathedral. He had to move the first resolution:—"That this meeting views with regret the ruinous condition of a building so interesting, both as a historical monument, and for its original architectural beauties, as the Chapter House of Westminster."

MR. BAILLIE COCHRANE, M.P., in seconding the resolution said, he trusted the object of the meeting would be a successful one. The resolution stated that the ruinous condition of the Chapter House was to be regretted, but he thought it ought to have gone further, and said that they looked upon the condition of the building with shame. He thought it was a disgrace to the country that our public monuments should be left in the state they were. They often heard the severe criticisms of foreigners on the state of our public buildings, and he did not think their criticisms were too severe. A building like the Chapter House in which they were assembled was a national one, and though situated in the metropolis, the whole of the country had an interest in it. As to the restoration of this monument, he thought they ought to go to Parliament for the money requisite (applause), and he was of opinion that if Parliament refused £20,000 for its restoration, it would be a disgrace to the country.

MR. WILLIAM TITE, M.P., supported the resolution. He said nothing could give him greater pleasure or excite stronger emotions of gratitude in him, as an architect, than to be present at such a meeting, and he thought they were much indebted to the Dean of Westminster for his perseverance in the matter. The first meeting held on the subject comprised only four individuals, but now they had a meeting consisting of large numbers of members of both Houses of Parliament, and of the literature of the day. He could not believe that in England, and with the great interest which the restoration of mediæval art had excited throughout the whole country, there could be any difficulty in obtaining funds requisite for the restoration of the Chapter House. It was a disgrace to England that, living as they did in a city having a population of three millions, there should be a

building like the Chapter House of Westminster in so dilapidated a condition. He was not surprised at the criticisms of foreigners. As to obtaining funds from Parliament for effecting the proposed restoration, he was not so sanguine as his honourable friend Mr. Baillie Cochrane. He trusted that the present meeting would lead to such results as they all desired and hoped to see effected.

The resolution was put from the chair and unanimously agreed to.

LORD TACROX said it would be a disgrace to this country if it allowed a building so interesting and so full of historical recollections as the Chapter House of Westminster to go to decay, for it was one of the most interesting monuments we possessed. He thought, from the very satisfactory and interesting speech of Mr. Scott, they might hope there was really no practical difficulty in carrying the proposed restoration into effect. It appeared that there was no practical difficulty, but there was the financial difficulty; and he owned that he was not so sanguine as Mr. Baillie Cochrane, that the Government or the Legislature would find the requisite money. However, whether that was so or not, he was convinced that the object they had in view was so right and just in itself, it would be successfully achieved. The present was not a very favourable time for a public subscription, but he was satisfied that at no very distant period of time, an object so just and so reasonable in itself would commend itself to the public spirit and good sense of the country, and that they should be able to command those funds that were requisite for the purpose. He should like Mr. Scott to state what would be the probable cost of putting the building in a proper state of repair. Looking at how much beauty, how much proportion, and how much interest attached to the building, it would be a scandal to the country to allow it to fall into decay. He had had the pleasure of seeing the chapter house of Salisbury restored, by private subscriptions, he believed. Surely a similar procedure could take place at Westminster, and it would be a great scandal to them if they did not provide the means of putting the Chapter House into a proper condition. His Lordship moved, "That this meeting is impressed with the desirableness of bringing the question of the restoration of the Chapter House at Westminster, under the attention of Her Majesty's Government, as well as of Parliament, and the public generally."

DR. DASENT seconded the motion, and in so doing said, he thought it would be unsafe to depend upon Government or Parliament for funds, but there was another source to which they might direct their attention, and that was the Ecclesiastical Commission. (Roars of laughter.) Well, he should insist, that if possible some sum from that body should be obtained. But supposing all other sources failed, they must fall back on the public generally, and he could not doubt that if this matter was properly brought before the public, there would be no difficulty in raising the requisite amount. Of course it was desirable that the public should have information as to the sum that would be requisite for the restoration.

MR. GEORGE GILBERT SCOTT said he estimated the cost at about £20,000.

MR. DASENT said he did not think the public would hesitate to raise the sum of £20,000, without calling upon the Government, the Parliament, or the Ecclesiastical Commissioners for aid. He had great pleasure in seconding the resolution, and had no doubt that from the public alone the requisite money would be obtained.

The Right Rev. the Bishop of Oxford supported the resolution. He said he understood the object of the meeting was, as it were, to feel the pulse of the public, and to ascertain whether they considered their object worthy of an effort for its accomplishment. It had been suggested that an application should be made to that "milch cow," the Ecclesiastical Commissioners; but as the ownership of the Chapter House rested with the Government, its restoration could not come within the provisions of the Act under which the Ecclesiastical Commission was appointed. But, looking to the fact that the Chapter House had become the property of the nation, and that so much had been done for the new Houses of Parliament—knowing also the determination to link the present with the past—he thought they had a claim, or, at all events, that something ought to be done, for the preservation and restoration of what was in fact the House of Commons in the early Tudor dynasties. The most likely way to succeed was to let it be seen that a large amount of public interest was manifested in the form of voluntary contributions. They might then call upon Parliament for a vote in aid. At the same time he admitted they had no prescriptive claim upon that assembly, and that if it made any grant it would be an act of grace.

MR. HUBBARD, M.P., thought the resolution was not sufficiently precise in its terms, and thought that the public ought to know clearly the sources from which the money was desired to come. After a short discussion it was agreed to that the words "Parliament and the public generally" should be omitted from the resolution.

The resolution in the amended form was passed unanimously, it being understood, however, that the promoters of the meeting would be at liberty at any future period to adopt such independent measures as to soliciting public aid as they might deem expedient.

MR. A. J. B. BERESFORD-HOPE moved the appointment of a Committee to nominate a deputation to wait upon the Chancellor of the Exchequer, for the purpose of presenting a memorial to the Lords of the Treasury, and taking such other steps as were calculated to promote the objects of the meeting.

MR. GEORGE AUGUSTUS SALA seconded the motion. MR. REEVE supported the motion, which was put from the chair, and unanimously agreed to. The following were appointed the Committee:—The Duke of Buccleuch, Lord Ashburton, Lord Stratford de Redcliffe, Bishop of Oxford, Mr. Cockerell, Mr. Tite, Lord Taunton, Lord Stanhope, Mr. Dasent, Mr. Hubbard, Mr.

Beresford Hope, Mr. Sala, Mr. Reeve, Mr. Monckton Milnes, Mr. Ackroyd, Mr. Cochrane, and the Dean of Westminster.

The following is a copy of the memorial to be presented to the Chancellor of the Exchequer, by a deputation from the Committee:—"To the Lords Commissioners of Her Majesty's Treasury: The Memorial of the undersigned sheweth that the undersigned residents in and visitors to London view with great regret the dilapidated and ruinous condition of the Chapter House of Westminster Abbey, a building which has been for many centuries in the occupation of the Government, and which is alike valuable for its architectural beauty, and for the historical interest attaching to it as the political place of meeting of the House of Commons during the Plantagenet and early Tudor dynasties. That your memorialists would further represent to your lordships, that the grievous injuries which this building has suffered have been mainly inflicted upon it in the adaptation of it to the custody of public records, and that the records which it formerly contained have now been removed to the head Record Office, while the Chapter House itself has been declared by competent authority to be unfit for the custody of papers from the risk of fire which it presents. Your memorialists, therefore, venture respectfully to suggest, that advantage should be taken of the present occasion to forbid the use of the Chapter House for objects for which it is peculiarly unfit, and to prepare the way for its future restoration. The mere removal of the incongruous fittings with which the building has been crowded would bring to light many of its ancient and ornamental features. Your memorialists further venture to suggest that the restoration of a historical memorial of so much beauty and importance, is an object for which your lordships might well, in the exercise of your discretion, invite the liberality of Parliament." The memorial was signed by most of the noblemen and gentlemen present, and now lies for signature at Messrs. Vacher's, 29 Parliament Street; Messrs. Colnaghi's, 13 Pall Mall E., and Mr. John Henry Parker's, 377 Strand.

LORD TALBOT DE MALAHIDE, in moving a vote of thanks to the noble Chairman, expressed his opinion that, in point of justice and of right, they had a very strong claim on the Government to be at the expense of restoring the Chapter House.

MR. ACKROYD seconded the motion, which was carried by acclamation.

The CHAIRMAN briefly acknowledged the compliment, and the meeting separated.

ARCHITECTURAL ASSOCIATION.—MR. R. P. SPIERS ON ARCHITECTURE IN NORMANDY.

AN ordinary general meeting of the Architectural Association was held at the rooms, 9 Conduit Street, Regent Street, on Friday evening; Mr. THOMAS BLASHILL, vice-president, in the chair.

The minutes of proceedings at the last meeting were read by the hon. sec. Mr. J. C. ADAMS, and confirmed.

New Member.—Mr. Henry Louis Florence, 30 Brixton Place, Brixton Road, having been balloted for, was duly elected a member of the Association.

Nomination.—Mr. R. H. Burden, 3 Brewer's Street, was proposed for membership, and will be balloted for at the next meeting.

ARCHITECTURE IN NORMANDY.

MR. G. B. NEW being unavoidably prevented from addressing the meeting on the subject of "Roofs," which he had intended doing this evening, Mr. R. PHENE SPIERS, M.I.B.A., delivered a lecture, which he described as "A Sketching Tour through Normandy," during the month of October 1861. The lecture was illustrated by a great number of drawings, engravings, and lithographs. The lecturer commenced by referring to a visit to the cathedral of Rheims, and one of the things which struck him there was that the side aisles had no chapels, and he was told that that feature prevailed throughout Champagne. Those chapels had, he believed, nearly always been added to the cathedrals in the fourteenth century, as at Notre Dame at Paris and Amiens. There was, therefore, less effect in Rheims cathedral, as regarded extent and size, than in the other two mentioned, but the deep shadows thrown by strong buttresses on the exterior added greatly to the beauty of the architecture. In the inside there was a small passage, about 2½ yards from the ground, which passed round the whole church, there being small doorways cut through the piers. There was a range of three stone seats in each of the side aisles. In the Rue de Tambourg was a very singular building, known as the house of the musician, of which the first story only exists as originally built. Between and on each side of the four windows are five niches with pointed arches, in which are placed sculptured figures playing different instruments. The figures are seated, and their seats supported by Gothic corbels. The cornice is also very good. The Hotel de Ville is of the time of Louis XIII.—XV., seventeenth century renaissance, but has been scraped and restored since. It is a stone building, ornamented with pilasters and brick, of very good proportions, and with a great deal of character about it. Not far from the station exists an old Roman arch in a very bad state of preservation, which was a very curious monument, such relics not being found, generally speaking, so far north. Thirty yards north of this arch has lately been discovered an old Roman mosaic pavement, nearly perfect, and extremely beautiful, as it seems to have retained its colours in all their pristine force and beauty. It measures about 27 ft. by 31 ft., and is at present covered by a shed; but it is said an intention exists of establishing a museum on the spot. The church of St. Remi is very interesting, owing to the different periods at which it has been restored and added to. Its erection was commenced in the eleventh century, on foundations of a still more

ancient date. The choir was added at the end of the twelfth or beginning of the thirteenth century, and bears a remarkable resemblance to the choir of Notre Dame at Paris. The side aisles were originally vaulted with the circular arch rib-vaulting, but this was removed in the thirteenth century, and pointed ribs placed; raising the gallery, which takes the place of the triforium, about two feet. In the same century small columns to carry a vault were introduced in the nave, and flying buttresses were placed on the outside, abutting upon and partially hiding Norman capitals, added in the twelfth century. A hospital blocks up the aisle windows of the north side. The southern transept is of the fifteenth century. The choir contains a very beautiful tomb of St. René; and a most beautiful marble screen, in Italian renaissance, encloses the choir. St. Jacques is another very interesting church, commenced in the thirteenth century, added to in the fifteenth and sixteenth, and restored in the nineteenth century. The lecturer proceeded to state that he was obliged to return to Paris on leaving Rheims, there being no railway across to Mantes, the first town he wished to visit before going to Rouen. The church of Notre Dame, Mantes, was built towards the end of the thirteenth century; the entrances are earlier, at least the centre one and that on the left, the other being of the fifteenth century. The triforium resembles that of Notre Dame at Paris, with its wide gallery round. This produces a strange effect outside, especially on the north, because, there being no side chapels, the side aisles mount up twice the general height. The upper part of the circular window in the façade is elliptical, probably on account of the interior vaulting. Round the tower and across the front of the church is a covered gallery, which has a series of two columns with lintels between them, which rest on the inner wall. One of the towers, and the gallery across the façade, are additions by the present architect, M. Durand. There was another old tower in the town, of which the church does not exist. It is extremely picturesque, and of the sixteenth century; the style being renaissance in detail, but Gothic in general treatment. The lecturer said he scarcely ever describes Rouen, which was one of the most glorious old towns he had ever seen. With the exception of the church of St. Ouen, it was perhaps much more interesting to artists than to architects; it was full of and contained perhaps the finest reminiscences of the last period of French Gothic—the Flamboyant. Greater delicacy of carving, greater richness of imagination, greater fancy and poetry in the extravagant exuberance of the detail of this debased but most beautiful style did not exist, and yet all this was rapidly going to ruin. He was glad to see, however, that the French Government were propping up some of the old towers, and hoped that they would not take into their heads the idea of restoring them. Mr. Spiers said the cathedral has a very gorgeous façade of the fifteenth century unfinished, and it is flanked on either side by two towers, which he believed belonged to two churches previously existing, and probably of the twelfth or thirteenth century. He thought the church was of the fourteenth century: it had a false triforium, that is to say, the side aisles mount above the triforium, which opens out on them. There is a passage along it, carried round the piers of the arches on small columns supported by corbels. The chapel of the Virgin at the end of the church, contains some very beautiful tombs, particularly one of the Cardinal of Amboise, of the sixteenth century; and the sculpture was beautiful and delicate, and of great richness. The church of St. Ouen was a fine specimen of Gothic; certainly the purity of its architectural lines was wonderful, but the structure was cold—the work of a mathematical, rather than of a poetical architect. The choir is surrounded by a very beautiful ironwork screen of the seventeenth century, which, strange to say, is so beautiful, that, though of a different style, it does not at all jar the feelings at its being seen in a Gothic church. The church of St. Ouen had some thirty years ago a façade with two towers placed obliquely. There were about thirty-seven churches in Rouen, of which only fourteen were used for religious services; the others being either in ruin or used as stores. Two of the latter have only the towers remaining, the other parts, which were falling, having been pulled down. He believed they were going to plant gardens around them, as at St. Jacques in Paris. After remarking that there were in the town under consideration several beautiful fountains and some wooden houses, the lecturer said the Hotel de Boughterolde, which had been copied at Sydenham for the Renaissance Court, was a very beautiful specimen of the renaissance. The Palais de Justice, of the fifteenth century, and in the Flamboyant style, was one of the finest buildings in the town; and resembles the town-halls of Belgium, than those of France, generally speaking. The ceiling of the large justice-room was original and very rich, though much could not be said about its construction, and it was rather complicated. The church of Notre Dame de bon Secours was well worth a visit, as the whole of the interior was coloured; and being situated on a hill, it commanded a fine view of Rouen. The church of St. George de Bosherville, about six miles from Rouen, was a very interesting structure, and formerly belonged to an abbey built in the eleventh century. The church is vaulted, has side aisles, and a thirteenth century tower and spire. The ruins of a cloister of the same period exist on the north side of it. The greatest treasure was the Chapter House, an oblong building in the transition style, vaulted, square end, and with three pointed windows having zigzag ornaments. The façade has three circular-headed openings, the centre one a doorway, of which the architraves are ornamented with an extremely beautiful Byzantine, or perhaps even Moorish decoration. The Norman choir of this church is very interesting. Candebec was beautifully situated on a bend of the river Seine, and the scenery round about most lovely; and, in fact, he could scarcely recommend a more beautiful excursion than to proceed from Rouen to Havre by boat. There was a very fine church at Candebec of the fifteenth and sixteenth centuries, especially

interesting as showing the effect of the introduction of Italian architecture on the flamboyant, and the mixture of the two styles. The tower of this church is more beautiful perhaps than those to be found at Rouen. The chapel behind the choir has an ugly, shapeless pendente, but the organ loft is very well arranged. The ruins of St. Wandrille, near Candebec, are very picturesque, and present the relics of a very beautiful fourteenth century church of considerable size. There exists at present a portion of the transept, and the walls of the side aisle chapels. There is a large seminary uninhabited by the side of the ruins. Havre, now that the fine old tower of Francis I. has been destroyed, has no particular interest, except a modern museum and Town-hall, both very good specimens of French architecture of the present day. There is also to be seen here a new Romanesque church by a French priest. The lecturer then proceeded to state that he took the boat from Havre to Caen, proceeding up the river Orne. The banks from its mouth up to Caen are bordered with rows of trees, and, from the moment a person entered it, he might fancy himself in the interior of a country, the trees growing up to the sea-side. As he intended to revisit Caen on his return from Cherbourg, he went on at once to Bayeux. "Bayeux," said the lecturer, "is a town where the civilisation of the last ten years seems to have little entered. I think there is only one new house in the whole town, and some slight alteration in the cathedral is all that occupies builders or architects there. All the houses, therefore, are of a certain age. The oldest seem to have been built in the sixteenth century, and though not rich in decoration, are well built in stone. The most remarkable have staircases in towers attached to the houses, and have at the top a chamber which is higher than the rest of the house, and at which one arrives by a small staircase at a corner of it. The cathedral belongs to different epochs. The lower part of the nave and the towers are of the Norman period; and the three doors of the western façade are an addition of the fourteenth century. The most ancient part, the crypt, brings the visitor back to the eleventh century; and in it are to be found some beautiful capitals to the columns. The Norman arcades in the nave belonged to a cathedral of the twelfth century, and on them, in the thirteenth century, was raised a lofty clerestory without intermediate triforium. A matter worth note is that none of the Norman arches are exactly similar: some have the centre below the line of the abaci of the columns, and some above; their archivolts are not equal, and the intercolumniations are of different lengths. Caumont remarks that 'this irregularity occurs often in Norman churches of a large size.' The choir is one of the finest types of the thirteenth century architecture, and the disposition of four pointed twin arches is rare. Caumont puts forth his views as to the date of the tower, the mystery respecting which has been solved; for the year before I arrived, the piers being found to be in a bad condition, it was necessary to have them removed. The lantern at the top, of the seventeenth century, was taken down, and the fifteenth century part underneath was raised up bodily, under-pinned, and new piers added. In taking away the old ones, apparently of the fifteenth century, were found imbedded in the centre Norman piers, supporting Norman circular arches, decorated with zigzags, which must have belonged to the original cathedral of the twelfth century, the date being about 1106. The porch on the south side belongs to the fifteenth century; some of the chapels on the north were built in 1289, and others about 1306; but they were restored or rebuilt in the fifteenth century. The two façades of the transepts are later, the northern being of the fourteenth, and the southern of the fifteenth century. The chapter house, of the thirteenth century, has been restored in the fourteenth and fifteenth centuries. The old Eveché, or Bishop's Palace, now occupied by the tribunals of justice, has some interesting portions of the thirteenth century, one of them being a renaissance chapel, which is now used as a retiring-room for the judges. It is vaulted in stone, and painted. The tapestry of the Queen Matilda, in the adjoining museum, is very interesting; but more as a historical subject than as a work of art. The greater part of the Church of St. Patrie is modern. The tower, however, which is a very fine one, dates from the year 1549; it is composed of seven stories, the four lower being square, and the three upper circular. There are many very interesting wooden houses at Bayeux. The house of the governor is a very remarkable one, in stone of the fifteenth century, the upper part being of the sixteenth or seventeenth century. The Church of St. Loup was originally a structure of the twelfth century, but the tower is the only portion of the building of that date which remains."

[We shall give the remainder of the lecture in our next.]

The CHAIRMAN said he could speak of the great architectural interest attached to almost every place which had been mentioned by Mr. Spiers. He advised tourists who went to Normandy to visit the Champagne country, and to go down to Chartres, where much that was interesting in architecture would be found.

A vote of thanks to Mr. Spiers, which was carried by acclamation, closed the proceedings.

CORN EXCHANGE, ST. NEOT'S.—A meeting of the directors of this building has been held to inspect plans submitted by Mr. Bellamy, of Lincoln. The designs of the architect were much approved of by the directors, and an engagement entered into for carrying out the works. It is much to be regretted that there is a small opposition to an undertaking like this, which promises the accommodation and comfort so long needed by merchants and farmers attending the market. The building will not only be suitable for all purposes, but will also be an architectural ornament to the town. The houses now standing on the site are advertised for sale, to be taken down and cleared away.

THE REREDOS, BEDMINSTER PARISH CHURCH.

OUR Engraving this week represents the Reredos of the Parish Church, Bedminster. It is of Caen stone, and occupies the entire width of the church. The lower stage is a simple arcading, surmounted by a band of quatrefoils. Above are three large panels, surmounted by crocketed canopies, and sculptured with alto-relievo representations of the Nativity, Crucifixion, and Ascension of our Lord. The first of these subjects, which is on the north side, represents the Virgin Mother kneeling in the stable at Bethlehem before her new born Son and Lord, S. Joseph by her side, and three shepherds coming in to pay their homage. Above the stable, which is conventionally treated, are angels, playing on instruments of music; and in the background appear the heads of some cattle.

In the central panel is the Crucifixion. On the north side of the cross stands S. Mary, with the Magdalene weeping on her shoulder; on the south, the "other Mary" and S. John. Above is an angel with crossed stole and uplifted arms, and in the background the city of Jerusalem, and "many bodies of the saints which slept" arising. The sun and moon are also conventionally introduced; and at the foot of the cross appear the usual emblems of mortality, together with a palm branch, indicative of Christ's victory over death.

The south panel represents the Ascension of our Lord, who is surrounded by rays, and attended by angels bearing the crown of glory. Between, and at the side of the panels, are niches containing statues of the four Evangelists, who stand upon pedestals adorned with their appropriate symbols. The jamb columns of the panels and niches are of rouge-royal marble from the Pyrenees, which serves admirably to relieve the statues within. In the spandrels formed by the canopies over the Evangelists are trefoils, in which are sculptured the instruments of the Passion: above those of the Nativity, Crucifixion, and Ascension, occur quatrefoils charged respectively with an Agnus Dei, a floriated cross with interscribed crown of thorns, and a Pelican in her Piety. Over the central canopy is a very elaborate jewel-cut cross; over each of the other four stand winged angels in the act of prayer. The wall behind is carved with a rich diaper pattern.

CORAL LIME.

EXPERIMENTS have been made, says the *Engineer's Journal* for India, by the officers in the Public Works Department, at Barrackpore and Dum-Dum, for the purpose of testing the cost and nature of the lime obtained from the coral of Port Blair. The result has been, on the whole, highly satisfactory; the quality of the lime is pronounced to be good, and the cost, as compared with Sylhet lime, shows a saving of over 100 per cent. In this calculation, however, the cost of shipping from Port Blair has been omitted, as the coral was brought up as ballast. It is reported that the coral makes a fine building mortar, and a fine lime both for plastering and for whitewashing.

One hundred cubic feet of the coral produced about 57 maunds of lime, and the cost per 100 maunds of lime is from Rs. 35 to Rs. 45, exclusive of the cost of the coral; the maund of lime measuring 2.4 cubic feet. The cost of Sylhet lime is from Rs. 85 to Rs. 90 per 100 maunds.

The executive engineer, Barrackpore division, concluded his report on the comparative value of Sylhet and coral lime by observing,—"There does not appear, either from the experiments or from the appearance, any difference between the two kinds of lime; the value seems nearly equal, and the only information obtained is as to the proportions of ingredients which may be made use of; and it appears that proportions of one part of lime to four of soorkie or sand give as good a mortar or plaster as is required. The period of setting in the former mixture does not exceed that of any other mixture; for plaster, the same proportions give a good firm plaster; whitewashing was also done with both kinds of lime, but there is scarcely any difference perceptible between them."

It appears that, not many years since, Sylhet lime cost in Calcutta Rs. 45 per 100 maunds; which is the highest price of the coral lime at the present day, exclusive of freight from Port Blair. The freight, however, must be considered, as the supply, in the form of ballast, would be necessarily limited and wholly unequal to meet any fair demand for the article. The question, then, of importance to builders and to the public is, what should be the freight of coral or coral lime from Port Blair. This should not exceed Rs. 10 per 100 maunds, which would enable the lime to be sold in Calcutta for very little more than the cost of Sylhet lime in former times, and cent. per cent. below the cost of the same article at the present day.

It would be an interesting subject of enquiry to ascertain the cause of an increase to the extent of a 100 per cent. during the last few years in the cost of Sylhet lime. Is this due to increase in wages and transport? or can any of it be traced to the monopoly which ever results from imperfect competition? An average yearly addition of four per cent. in the cost of production would seem to be highly improbable. It is much more likely that a very considerable part of the increase has gone into the pocket of the manufacturer, and that his receipts have been very much in excess of legitimate profit. We therefore look hopefully to the advent of the coral lime. If this can be sold in Calcutta at 25 per cent. above the cost of production, it will be a very great boon to the public as reducing building materials, and, as a necessary consequence, house rent, in a city where house rent is so extravagantly high, as it is in Calcutta.

LONDON SUBURBS.

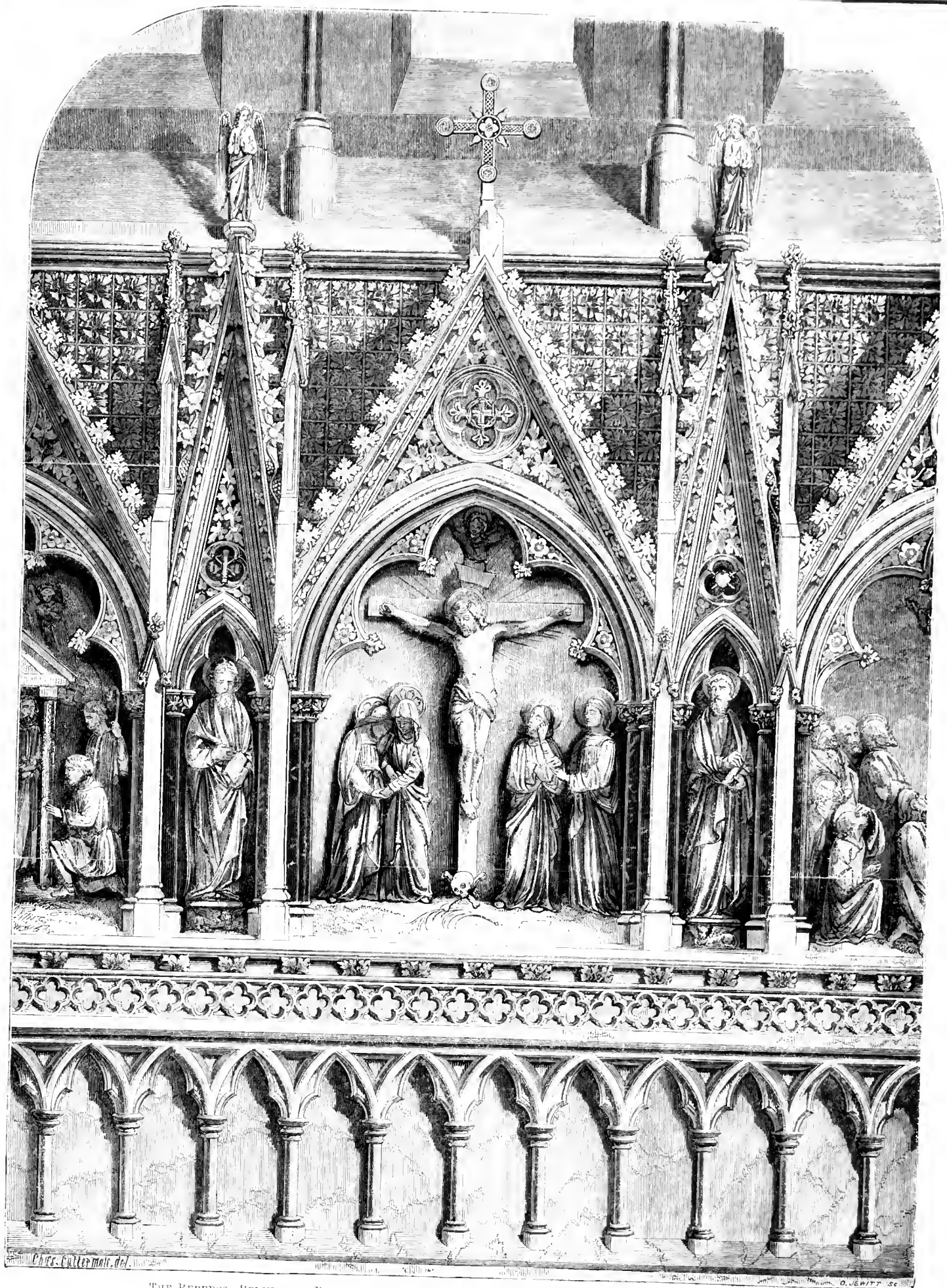
IF there be one thing more than another upon which the inhabitants of London may pride themselves, it is upon the fact, that they possess, within a dozen miles radius of St. Paul's, some of the most delicious scenery which can refresh the eye or invigorate the mind. Let them escape from the bustle and turmoil of the great city by whatever outlet they may, and they are certain to find, within the circuit referred to, sylvan beauties and rural scenes, which cannot but charm them into forgetfulness of the cares and anxieties of business. Whatever the French "gentlemen of the press" may say, too, about the dreariness of a "Sunday in London," we would ask them whether they can point to any great city on the continent which has in its immediate environs any retreat for the week-day toiler which can match with our Kew Gardens, our Hampton Court, or our Bushy Park,—would that we could say also, our Crystal Palace grounds; but these are as a sealed book on Sunday.

Thus we thought while recently paying a visit to one of the most delightful of the places referred to above, namely, Kew Gardens. It ought to be regarded as an inestimable blessing, that within so easy a distance, and at so small a cost, the working bees of this vast hive of industry may on the day of rest betake themselves to Kew, and revel amid the flowers and the forest trees of that pleasant locale. "All work and no play makes Jack a dull boy," and assuredly, the legislature never did a wiser thing, than when they placed at Jack's, ay, and at Jenny's disposal, at all convenient seasons, gardens, parks, and pleasure grounds. It is agreeable to note that, so far as Kew Gardens are concerned, the march of improvement is still going on. In addition to the thousand and one natural and artificial attractions of that place, a vast Conservatory and Winter Garden is rapidly approaching completion. This edifice, which will be provided with a roof of glass, occupies an extensive area on the right hand side of the grand lawn avenue, between the existing Palm-house and the Pagoda. It is 700 ft. in length, and perhaps 150 ft. in width, and will, when completed, form the largest building for purely horticultural and floricultural purposes in the world. There is at either end of this crystal conservatory a separate circular building, also roofed with glass, and of considerable dimensions. These are intended for the reception of exotics, which require to breathe a warmer and more humid atmosphere than the hardy occupants of the giant building which separates them. The Messrs. Cubitt and Co., of Pimlico are the contractors for this extensive work, and that is saying that it will be well executed.

On a mound, on the opposite side of the avenue to the new Winter Garden, a flag-staff of unrivalled symmetry and height has been set up. It is made of the Douglas pine, and was imported from Vancouver's Island. Mr. Edward Stamp was the donor of this magnificent production of the forest. Its total length is 159 ft., its diameter at the base 22 in., and it tapers to a diameter of 8 in. at the top. Two hundred and fifty rings or layers of wood disclose the fact that the huge spar took 250 years to attain its present dimensions. Its weight is 3 tons, and it contains 157 square feet of timber.

LEGAL INTELLIGENCE.

IN the Bail Court, before Mr. Justice WIGHTMAN, in the matter of an arbitration between John Bulmer and Thomas Nicholson and others.—Mr. T. Jones appeared to show cause against a rule, obtained by Mr. F. Russell during the present term, on behalf of John Bulmer, calling upon Thomas Nicholson and Messrs. Bowman and Raine, his sureties, to pay to Mr. Bulmer various sums of money, amounting to £1,033 18s. 11d., found to be due to him under the award of Mr. Thomas Austin, of Newcastle-upon-Tyne, architect. The matter in dispute arose out of the contract for the building of the new hospital for inmates at Sherburn, in this county, which was entered into some time ago between the governors of the hospital and Mr. Thomas Nicholson, a builder, of Gainford, near Darlington. Subsequently the contract was sublet by Nicholson to Mr. John Bulmer, and disputes having arisen between the parties, it was agreed that the whole matter should be referred to the arbitration of Mr. Austin, the architect employed by the governors for the erection of the hospital buildings. It was the award made by Mr. Austin, under these circumstances, that it was now sought to enforce in the usual way; and on showing cause against the rule obtained for that purpose, Mr. T. Jones endeavoured to prove to the Court that the arbitrator had exceeded the power with which he was invested by the agreement of reference, and has awarded a considerably larger sum to Mr. Bulmer for the work done by him than, upon his (the arbitrator's) own showing, Bulmer was properly entitled to be paid. In support of this view, Mr. Jones read an affidavit, made by Mr. Nicholson's solicitor, but as the main point relied upon therein was contained in a communication from the solicitor of Mr. Bulmer to the solicitor of Mr. Nicholson, which, though written "without prejudice," was unexpectedly and (as it was contended) improperly made use of in opposition to the rule, the learned judge, without calling upon Mr. Russell, ordered the rule to be made absolute, but directed that it should not be enforced until after the last day of term, in order to give Mr. Nicholson and his sureties an opportunity of bringing the amount awarded into court, in accordance with the leave given to them a few days previously by the full court. We understand, however, that the money has not been paid, and that therefore the rule to enforce the award against Messrs. Nicholson, Raine, and Bowman has been made absolute in terms.—*Durham Advertiser.*



THE REREDOS—BEDMINGTON PARISH CHURCH, SOMERSET. Architect, JOHN NOETON, Esq., 24 Old Bond Street, W.

BRICKS AND TILES.

(Concluded from our last.)

BELGIUM, Holland, and the Netherlands, and a large district of central Europe, including Denmark, Brandenburg, part of Poland, and the north of Prussia, are noted for ancient brick buildings. Of this region Brandenburg appears to have been a sort of centre, and here examples of ancient brickwork, extending from the twelfth to the sixteenth centuries, inclusive, can be examined. (See Essenwein, *Norddeutschland's Backstein Bau im Mittelalter*, and Adler, *Mittelalterliche Backstein Bauwerke des Preussischen Staates*.) Marienburg, Danzig, Lubek, and Schwerin, may be mentioned as containing remarkable brick buildings, secular and ecclesiastical. Nearly all the brick buildings of Germany now remaining are Gothic, and some among them are very elaborate, as, for instance, the church of St. Catherine at Brandenburg, of which the richest portion (the chapel of the Holy Sepulchre) was built at the end of the fourteenth century, and executed in variously coloured bricks, enriched with a profusion of intricate tracery, also executed in brick, and hardly surpassed in elaboration by any stone tracery of the same period. The excellence of the Dutch and Flemish bricks and tiles is well known, and they were formerly imported to this country in considerable numbers.

In France (Viollet le Duc, *Dictionnaire d'Architecture*, arts. "Brique," "Carrelage," De Caumont, *Abecedario*) the use of bricks was introduced by the Romans, and under them, and in the Merovingian period, they were frequently employed in conjunction with stone, as already described; but after the ninth century bricks are rarely found in France mixed with other materials; where used they occur alone. In the south of France, however, brickwork with stone dressings is found, as in the church of St. Sernin at Toulouse, built in the twelfth century, and in other churches of that city. In Languedoc, a province where stone was almost entirely deficient, buildings of the thirteenth and fourteenth centuries are found built almost exclusively of brick, but this material was very rarely employed during those centuries in other parts of France. Specimens, however, exist at Toulouse, Alby, Moissac, &c. Bricks enameled of different colours were, moreover, often employed at this period for interior linings to walls, and brick was also made use of with excellent effect in filling in the spaces in timber-framed constructions.

At Moulins, in the Bourbonnais, walls in ornamental brickwork are found which date from the fifteenth century; they are executed in bricks of various colours laid with thick beds of a mortar of extraordinary strength.

In the succeeding century, the sixteenth, brickwork mixed with stone came much into use in France, and from that century to the present day this manner of building has been extensively made use of in that country. In some of the castles of the sixteenth century, for example, the Chateau de Livet (see De Caumont), a species of chequered work, of bricks of several colours alternating with blocks of stone, has been adopted for the walls, and harmonises well with the variegated and enameled tiles for roofs and enameled bricks for floors which by that time had come into use. Parts of the chateaux of Blois and Fontainebleau may be cited as effective examples of the mixture of brick and stonework.

The earliest paving tiles known in France, are those discovered at St. Denis. The pavements there were formed of very small pieces of tiles, measuring not more than $1\frac{1}{2}$ in. square, and closely resembling ancient mosaic. Enameled tiles are found in the paving of some churches in France, dating from as far back as the middle of the eleventh century, but the number of specimens remaining from that and the twelfth century is extremely small. In the thirteenth century the mosaic floorings just referred to were replaced by tiles encrusted with ornaments. Some tiles of this period had a sunk pattern simply impressed upon them, and it seems probable that those first manufactured were of this nature, and that the practice of filling up this impressed pattern with clay of a different colour and glazing the whole was a subsequent step in the manufacture. In the fourteenth and fifteenth centuries tile pavings became very extensively employed, and in some of them comparatively small squares of inlaid and enameled tile are combined to form patterns of large size and of the greatest richness and beauty. Of these the most celebrated is a rich paving in the church of St. Pierre sur Dive. In some instances monumental effigies were formed of encaustic tiles.

In the fifteenth century tiles with patterns in relief were employed in France for paving, and in the sixteenth century enameled and coloured tiles came into general use for roofs; plain tiles having, no doubt, been long employed for the same purpose. These ornamental glazed roofing tiles have continued in use in parts of Germany and France to the present day.

Ornamental finials and crestings in tile and terra-cotta were frequently made use of in connection with these glazed roofing tiles, and were many of them of a highly elaborate character of work.

Turning to our own country, it appears that the Romans introduced the manufacture and use of bricks and tiles into England, and they are constantly met with among the Roman remains. There is, however, reason to believe that, although tiles for roofing and flooring probably continued to be manufactured, few bricks, if any, were produced in England from the Roman time till the end of the thirteenth century; for where bricks occur in buildings erected during that period, they seem to have been always plundered from the ruins of some Roman building, and commonly have pieces of the Roman mortar adhering to them. This is the case at Dover Castle Church; St. Martin's, Canterbury; Darent Church, Kent; Barnack; Colchester Castle, and in other instances. It is related (by Matthew Paris)

that the Saxon abbots of St. Albans, having been obliged, through famine, to sell the store of materials they had collected, for the purpose of rebuilding the Abbey church, the Norman abbot had recourse (A.D. 1077) to the Roman bricks which were to be found in the adjacent city of Verulam, and that with these he built the church. They still exist and are visible in portions of the structure.

"The earliest existing edifice of modern bricks is said to be the Hall at Little Wenham, Suffolk. This is dated about 1260, or 1280. A good description, with illustrations, is given by Turner, *Domestic Arch.*, 8vo. London, p. 151, who seems to think that the earliest brick buildings of this period were the work of Flemings, or at least were built of Flemish bricks. The bond very much resembles what is called Yorkshire, or flying bond. After this period the use of bricks became more and more common, especially in those countries where stone is scarce. Norfolk and Suffolk contain many beautiful examples of mediæval brickwork, as Caistor Castle. In many places, after the Reformation, it seems almost to have superseded the use of stone." (*Dict. of Arch. Pub. Society.*)

Tiles for roofing seem to have been in use in this country at a very early period, so much so that in taking down part of an old Norman building in Southwark, at the time when the approaches to New London Bridge were formed, tiles were found built into the wall which had indubitably been constructed for use as roofing tiles.

The most ancient ornamental flooring tiles found in this country appear to belong to the thirteenth century; and numerous examples dating from the fourteenth and fifteenth centuries are found. Few of the remaining pavements exhibit large and elaborate patterns formed of a combination of small pieces; their usual character being a repetition of a pattern of small size, sometimes contained on the single tile, and at other times formed by the combination of four or six, or eight, or some other small number of tiles.

In the fifteenth century (A.D. 1477) the manufacture of tiles was of importance enough in England to require regulation by a statute (stat. 17 Edw. IV. cap. 4); and tiles dating from the middle of this century (A.D. 1453 to 1456) occur at Great Malvern, where they were employed as a decorative lining to the wall of the chancel round the high altar. In the sixteenth century, the manufacture seems to have declined, and the use of English tiles is said to have been superseded by the importation of Flanders tiles. (*Glossary of Arch.*, art. "Tiles.")

Much excellent and curious brickwork of the seventeenth, and some of the succeeding century exists in various parts of England, the ornamental portions being partly executed in moulded bricks and partly enriched by carving done on the brickwork after it has been built up.

The duty levied upon bricks was first imposed A.D. 1784, at a rate of 2s. per 1,000, and continued in force, but at higher rates, till a recent period.

From the simple nature of the material, fewer instances of unusual varieties and of special modes of manufacture are met with than occur in many other branches of manufacture. Pliny (*Hist. Nat. lib. xxxv. c. 14*) mentions bricks light enough to float in water, and Fabbioni discovered a substance at Castel del Piano, a spot between Tuscany and the Papal dominions, capable of being made into such bricks. Porous bricks, which will float in water, are said to have been employed, on account of their lightness, in the vault of St. Sophia, at Constantinople; and in some of the Roman vaults hollow bricks were used on the same account. Similar bricks, devised and manufactured expressly for the purpose, were employed in turning the great vault over St. George's Hall, Liverpool.

Most of the steps in the history of the introduction of machinery for the manufacture of bricks can be traced in the accompanying series of specifications. Perhaps the most important invention relating to brick-making, the first introduction of which is not there recorded, is that of mixing ashes (technically called soil) with the brick earth, and the employment of coarser ashes in the burning of bricks. The discovery that the refuse of coal fires could be thus utilised has proved of the greatest importance, especially to the brickmakers of the district round London, but when or by whom that discovery was made is now quite unknown.

A comprehensive and very complete account of the manufacture, properties, dimensions, and uses of bricks is to be found in the articles already repeatedly quoted in the Dictionary of the Architectural Publication Society, under the heads of Brick, Brickmaking, &c., and references will be found in those articles to most of the publications from which further information may be gained. In addition to some of the works already mentioned in the foregoing notice, these references include the following works:—Seroux d'Agincourt, *Recueil des fragments en terre cuite*, Paris, 1814; Baskwell, *Observations on Building and Brickmaking*, 12mo. Manchester, 1834; Wedke and Romberg, *Die Baumaterial-Lehre*, 4to. Leipzig; Dobson, *Rudimentary Treatise on the Manufacture of Bricks*, 12mo. London, 1850; Rondélet, *Traité théorique*, 10th edit. 4to. Paris, 1852, and *Supplément*, by Blouet, 1836; Delonge, *Art de Briquetier*; Simons, *Account of Brick-making at Bletchingley Tunnel*, 1840–41, given in *Civil Engineers Journal*, vi.; 348. and Clere, *Essai pratique sur l'art du Briquetier*, 8vo. Paris, 1828.

DISTRICT FIRE BRIGADES.

WE perceive that a movement has recently been made, in the populous district of London, known as Kentish Town, toward the institution of an independent Fire Brigade. The idea is an excellent one, and we look forward with considerable interest to its realisation. The rapid growth and development of the suburban districts of the metropolis

generally, during the last half-dozen years is something marvellous, but we question whether house—nay, street—building has been carried on anywhere during that period to the extent that it has in Kentish and Camden Towns. As if called into existence by the enchanter's wand, whole ranges of buildings there spring into being at once, as it were; and that which was but yesterday a large area of waste ground, is to-day covered by bricks and mortar, and to-morrow will be inhabited by shoals of new colonists. If it be a mystery as to how so many new houses are built in so short a space of time, it seems a still greater mystery as to where the tenants come from who occupy them before they are well finished. However these things may be accounted for, they are facts: and it becomes, therefore, a very pertinent question for the inhabitants of the crowded districts, as to how they are to protect themselves from the evils of fire. It is quite true that the fearful increase in the number of fires in the metropolis, and its outlying districts, during the last year has attracted the notice of the Legislature, and that a committee of the House of Commons have sat and reported upon the matter. Governmental machinery, however, moves but slowly, unless pressure be exerted to expedite its movements, and, to give another reading to an old adage, "While legislators deliberate, fire destroys."

The people of Kentish Town, therefore, are to be commended for taking the law into their own hands in this case, and in organising for themselves arrangements for the speedy extinction of fire. It is a positive fact that at present the whole parish of St. Pancras—in which the principal part of Kentish, and Camden Towns are situated—with its population of 40,000, possesses but one, and that a very old, fire-engine. The nearest station of the London Fire Brigade is in Wells Street, Oxford Street; so that it may be easily conceived to what extent of danger the inhabitants of the districts in question are constantly exposed. It is proposed, we believe, that the station of the new Kentish Town Fire Brigade shall be established in Ferdinand Street, Hampstead Road, that being in the very heart of the unprotected locality. The preliminary steps have been so far taken as to warrant the engagement, provisionally, of a powerful engine of the most improved form, and constructed by Messrs. Shand and Mason of the Blackfriars Road. Arrangements have also been entered into with a Superintendent and a staff of firemen, for the purpose of giving effect to the intentions of the spirited promoters of the plan. Voluntary subscriptions are to afford the means of supporting it.

It may be trusted that other districts will follow the initiative of Kentish Town, because whatever may come of the recommendations of the Fire Committee to which reference has been made, it is certain that only good results can follow a spirited determination on the part of the inhabitants of London and its suburbs to help themselves in suppressing fires.

GAS APPARATUS AT THE INTERNATIONAL EXHIBITION.

(Concluded from our last.)

THE wear and tear of east-iron retorts when used for oil-gas making, forms a large item in the cost of manufacturing this gas. In some countries coals are dear, inferior in quality, producing poor gas, though the price per 1,000 is high. In gas-works so situated, it would probably be advantageous to have a cistern of petroleum oil fixed outside the retort-house. Then a main pipe from the cistern, with branch connections to each of the clay or iron coal-gas retorts, would permit a jet of oil to be sent over the heated coke in each of the retorts towards the latter end of the charge, thereby considerably improving the illuminating power of the gas made. The distillation of Boghead canal coal will probably now be discontinued by the paraffin oil and candle manufacturers, who will find this rock oil the most economical for their purpose. The principal products derived from the distillation are the same as from coal, namely, naphtha, for melting india-rubber and resins; benzole, for dissolving fat and vaporising oil; illuminating oil, convertible into gas; heavy lubricating oils, and naphthaline.

A great improvement can be noticed in the workmanship and compactness of the diminutive gasworks shown, Class X. Nobody who has ever before seen a coal-gas apparatus, could conceive that one could be fixed for a house requiring twenty burners on two ornamental stands, about the size of two drawing-room chairs, exclusive of stowage-room for gas after making, exhibited by the inventor, Mr. G. Bower, St. Neot's. One of these little stands contains a vertical retort, the novelty consisting in lowering a lever attached to a lime luted lid at the bottom of the gas-retort, which permits the used charge of coal, after being changed into coke, to fall out. By raising the lever, the retort is ready for recharging at top. The second stand consists of an annular condenser, the inner ring forming a case for four tiers of sieves for lime purification; the floor acting as a well for sealing the connecting-pipe to the retort. Messrs. Porter and Co., Lincoln, have a stand well worthy of inspection, it contains three gas apparatus, two being constructed in the usual manner, suitable for lighting country factories and farm houses; the third being one adapted for canal coal, invented by Mr. Bower, and called the "National Gas Apparatus." Nothing could be better adapted for noblemen's country mansions, where goodness, but not cost, of the gas is considered. The patent consists in feeding a retort by a hopper, and forcing, with a screw arrangement through the mouth-piece, the used charge of coal into a pan of water at the back end, and below the retort, where it would not be subject to the action of the furnace-fire. At the time of the late Crystal Palace Exhibition in Hyde Park, White's hydrocarbon or water-gas, seemed to be supplanting the old and present mode. Its arrangements were based on scientific principles; the passing the vapour of water over iron cuttings, which absorbed

the oxygen of the water and set the hydrogen free for forming carburetted hydrogen when passed over heated coke in a sealed vessel. So far as Great Britain is concerned, this patent is a dead letter.* Two wheels support a furnace, the fire of which plays on a vertical gas retort, the open lower end of which terminates and is sealed in a water-cistern; consequently, half the retort is carbonising coal, the other half creating steam. There is a large waste of furnace fuel, the heated gaseous vapour of the water passes through the whole of the red-hot coke, eaking towards the end of the retort, thus producing carbonic acid and light carburetted hydrogen gas. The exhibitor, Mr. L. Edmonson, should discontinue at once such a faulty arrangement. If he likes to have a furnace on wheels, let him cast the vertical retort with the floor closed, and place the outlet at the lower part of the side at back, sealing the lid when removed with lime luting in the usual way. The great object in all gas-works is to use coal perfectly dry. To patent a method that keeps coals damp when employed in making gas seems a little remarkable.

Class X., also, has some bituminised pipes for gas and water purposes—size, from 2 ft. 6 in. bore, and under; lengths, from 9 ft. to 6 ft. Time alone will prove whether such description of pipes will retain water under pressure, or bear the chemical action of gas. There are some large-sized east-iron pipes, by Mr. D. Y. Stewart and Mr. Edington, Glasgow, manufacturers. Messrs. Cochrane, Dudley, in Class I., also exhibit a very large east-iron pipe. Returning to the Civil Engineering department, Mr. George Glover shows his patent standard gasometer, fitted with "Negretti's" patent gas thermometer. The improvement effected by Mr. Glover is considerably in advance of the mode devised by Professor Airy, who forced the measured gas out of the cubic foot holder, whereby a portion of the gas became disseminated in the water of the tank—the difference being the raising a tank full of water for the purpose merely of displacing in the holder the issuing gas passing into the meter to be tested. The Gothic gas chandeliers shown by Messrs. Harts, London, and R. W. Winfield, Birmingham, are worthy of inspection, Mr. Messenger having some of a mediæval character, designed by Mr. Digby Wyatt. The stand of Messrs. Mapplebeck and Lowe contains gaseliers having many varieties of lacquer. Lambert Brothers, Walsall, show a gas valve, which indicates on a plate the degree it may be partially or fully open, or wholly closed. Mr. R. H. Hughes' safety whistling chandelier is to be seen in Class XXXI. The action is simple: when, through the evaporation of a warm room, the water in the outer pipe of the telescope has become too little, gas passes under the end of the middle pipe, which, on escaping at the top of the outer pipe, blows a whistle fixed there. In a similar manner might be placed whistles to lower curbs of gasholders in gas works, which would announce their being full. Mr. Clarke shows his patent gas regulator, which, like those introduced by Mr. Hart and Mr. Paddon, will save people the trouble of having to adjust their gas burner taps, of an evening. Mr. Laidlaw's stall contains Allen's patent protecting and compensating gas meter.

At the last Exhibition there was shown an unpatented meter by Mr. R. C. Mead, which contained the principle of replenishing from a reservoir by the rotary action of the wheel the water absorbed by the dry gas from the drum. Since then, probably twenty patents have been obtained for doing the same thing by a slight alteration of manner.

On account of the porous nature of fire-clay gas retorts, in large gas-works it has been found necessary to force the gas, after being generated through the pipes and layers of purifying materials, to prevent back pressure on retorts: This is done by a peculiarly fitted steam-engine called an "exhauster." Singularly enough, no such kind of machinery can be noticed in the building; though from the circumstance of very little power being necessary, the smallest engine suffices. The refuse ashes from other furnaces in gas-works would keep exhausters in action. The attention required when in use is inconsiderable, almost nominal. Exhausters prevent a considerable loss of gas; it is probable before long, in works where over five millions of gas is manufactured annually, they will be generally introduced. On two pedestals at the steps under eastern dome are two beautiful mediæval gas standards fully 6 ft. high, made for the Lichfield Cathedral, by Mr. Skidmore; the deep tone they are painted, partly blue, purple, brown and green, harmonises well, infinitely superior to the paltry, tawdry, glittering, yellow lacquer. Mr. D. Dawson, Class I, shows a bottle of coal tar and its products, crude naphtha, benzole, aniline, and the beautiful Magenta dye. A few years since the carbon encrustation of retorts formed part of the refuse of gas; it is now bought by manufacturers for mixing with fire-clay, to make crucibles for melting copper, which goes by the name of the improved carbon crucible; Mr. Hall and others exhibit them. Some consider this kind equal, if not superior, to the patent plumbago crucible.

A Mr. Warner advertises his patent anhydrous oxide of iron by means of a placard hung up in Class I. This placard bears a highly coloured print of a gas works, bought evidently at a shop in the "Strand," in whose windows such has appeared for sale for the use of schools during the last twenty years. For a long period the economy of using the various oxides of iron and other metals for gas purification, has been generally appreciated, on account of their revivifying after repeated use, when exposed to atmospheric influence. Mr. Cockey shows his patent centre valve, which bears a striking resemblance to those used by Mr. Malam, thirty years since. There is also a patent-safety mode for drilling and tapping gas main-pipes to connect services; the tap follows the drill, forming part of same piece of steel. The escape of gas is prevented by the neck of the drill-tap being encircled by a pad. The Wood Street explosion caused this ap-

* Wigram's Patent. Class 10.

paratus to be invented. Samples of the red-painted tin canisters which disfigure many of the public lamps, are, it appears, now at the Exhibition. If the fluid, probably petroleum oil, used by the Carburetting Company, confers, when vaporised in coal gas, such an increase of illuminating power, surely the combination should take place at the gas works in the manner suggested already. To carry out the principle in its integrity, the gas burner should be removed, and the fluid burned in Holliday's lamp. When coal gas is burned perfectly, all its illuminating power is produced without any such aids.

Mr. Prosser's patent oxy-hydrogen lime lamp may be seen, being the particular one which was used during three months at the South Foreland lighthouse. It is stated that the lamp then burned for sixteen hours, without requiring any attention. About two years since, the lime light for some time was used at Westminster Bridge. This light is produced by the joint combustion of hydrogen and oxygen gases, in very minute quantities, upon a wick of lime. The great cost of manufacturing oxygen, together with this mode requiring two lines of pipe for each lamp, caused its use to be discontinued.

The late George Stephenson was the first who suggested that the coal formations absorbed from the sun, in past ages, the illuminating power which now lights our streets at night. This idea is still promulgated by writers and lecturers. To substantiate this notion, some matter should now be re-absorbing the light given forth daily, not only by the sun, but by fires and other artificial means continually in use for producing light. There is one agent, oxygen, which decomposes minerals, rocks, &c., continuing afterwards in the form of oxides, &c., to be absorbed for a time by the substances subdued. The continuous action of oxygen has been going on since every alteration in the earth's surface can be conceived. Assuredly oxygen, which reduces everything, the action of which causes all light, requires, when absorbed by its affinity to other substances, to be restored. May not, therefore, the sun's rays be a producer of oxygen in the upper atmosphere?

GEORGE WALCOTT, C.E.

THE REV. GEORGE WILLIAMS, B.D., ON ECCLESIASTICAL ARCHITECTURE IN GEORGIA AND ARMENIA.

THE CONVENT AND CHURCHES OF SAFFARA.

I MUST now beg you to accompany me up the lovely valley of Borjom, into the wild volcanic district of Abkhazie, where in a narrow gorge which opens on the left bank of the river Ourawelha, an affluent of the Kuv, are found the extensive and picturesque ruins of the Convent of Saffara, built on an artificial platform, partly levelled in the rocky hollow of the valley, partly formed of solid masonry. Its eastern and western boundary walls are drawn right across the rugged valley; the northern and southern walls run along its steep sides, following the irregularities of the ground, having a circumference of more than half a mile. At the north-west angle of the enclosure is a castle, situated on the wall itself at its highest part, and commanding the whole position.

The monastery was dedicated to the Blessed Virgin; but its principal church with which I shall commence my description, as I did my survey, is named after S. Saba, a saint of Palestine of the fifth century, whose celebrated monastery in the wildest part of the wilderness of Judea is known to all who have travelled in that country; and this dedication of a Georgian church to a comparatively obscure local saint of Syria, is an interesting national memorial of a well-attested historical fact, that the Georgian Christians of the Middle Ages were among the most numerous and devout pilgrims to the Holy Land, where they were treated with greater consideration by the Moslems than any other pilgrims.

The exterior plan of St. Saba's Church is a parallelogram. Its interior cruciform, similar in this as in other respects to the church of Timotheusméné, which I have before described as a type of the larger churches of Georgia. The nave of a single bay; the peculiar aisles; the transepts extending the whole width of the building; the deep apsidal sanctuary (semicircular within, flat square without), flanked by chapels, so to speak, with similar terminations; and the polygonal lantern at the intersection of the roofs, are features common to the two buildings, as is also the massive stone roofs with the bold overhanging coping. The general dimensions are nearly the same, the Church of St. Saba having slightly the advantage in size.

The construction of the arches is of the rudest type of Romanesque, utterly devoid of mouldings or ornaments of any kind. A short shaft resting on the crown of the principal arch supports two smaller arches, lighting a triforium gallery over the diminutive aisles, which open also by narrow round-headed arches into the transepts.

The church, sufficiently lighted by the elegant lantern (circular within, but polygonal without), has windows only in the centre of the apse, and the extremities of the transepts, small single lights of Romanesque, very much played.

Of the side chapels of the sanctuary, that on the north communicates with the sanctuary as well as with the transept, the south with the transept only, as at Timotheusméné. The apses of both are pierced with narrow round-headed lights much played. In the apse of the north chapel still stands a very remarkable altar, consisting of a round shaft with a cushion capital, the abacus of which serves as the holy table, being not much more than a foot square. In front of this is another modern altar, which is still occasionally used.

Immediately within the entrance of the south chapel, on the right, a hole in the floor suggested the idea of crypts, which the situation of the church seemed fully to warrant, and the native's account of large vaults extending under the whole church—filled with human bones—to which this was the entrance, excited my curiosity, which was far from satisfied, when having, after infinite trouble, effected an entrance by means of a rickety ladder, without rounds, I found that the crypt extended only under this small chapel. However, I had done my duty as an ecclesiologist, and risked my neck into the bargain.

I shall have done with the interior of the church when I have further mentioned that the walls appear to have been covered with frescoes. The most intelligible of what remains is also probably the most interesting. It is on the wall of the south transept. The picture represents two Georgian princes—

atabeles—in rich national costume, still in use, presenting a model of the Church to our Saviour through the intercession of the saint to whom it is dedicated. The figures are larger than life, the treatment no doubt conventional, but very effective. As to the identity of the saint there is no question, since his name is written in the character called 'khoutzouri,' near his head; and the name and title of one of the chiefs has been deciphered: "Beka, spassalar, generalissimo of Samtzhkhé." The fragments of a longer inscription were read, and are translated in M. Brosset's 2nd Report to Prince Verantzoff.

The inscription obviously amounted to an invocation of blessings temporal and spiritual on the restorer of the church, in consideration of his services to the house of the Lord: and this benefactor was Sargis, commander-in-chief of the Samtzhkhé, son of Beka, chief of the mandators—whatever that may mean. These notices will be of service when we come to the history of the church, which we must now leave by the west door, in order to examine the porch, when we have just noticed, by the way, that there is also a north door giving entrance into the north aisle, richly ornamented without, and having in the tympanum a foliated Greek cross, with the brief inscription, "Christ, the Word of Life."

The porch is 26 ft. long by 9 ft. 6½ deep, with north and south doors, supported by three round arches, resting on round shafts. The beauty and finish of its exquisite arabesque chiseling forms a remarkable contrast to the rudeness of the interior work, to which I have already adverted, and would seem to indicate a later period, and a further advanced stage of architectural science. And yet, on the other hand, the exterior ornamentation of the doors and windows of the church, which is almost equally rich—specimens of which I am able to exhibit to you—and which seem to be coeval with the building, prevent me from positively adopting this hypothesis, especially as the inscriptions on the porch itself apparently belong to the same period as the princes whose names are recorded in the interior. One of these inscriptions runs partly round the window of the porch, and is as follows: "This temple was finished, after the foundation . . . by the hand of Pharelas-Dzē (or the son of Pharela), God assoile him." Without the circle, in characters not carved, but only painted, is apparently the date: but impressed in a manner utterly unusual in Georgia. The numerical value of the characters is 500 + 100 + 9 + 1 = 610: but as the era is left absolutely undetermined, the date must be purely conjectural. M. Brosset suggests that the copyist—the universal scapegoat in all such cases—has inserted the 100 by mistake, and that the date should be 509 [510] (of the Pascal cycle to wit), which would correspond with 1289 A.D. [the cycle only numbers as far as 532]; from which he concludes that the date ought to be read 529, = 1309 A.D. Such a deduction from a baseless hypothesis does not satisfy us; but I have nothing more plausible to suggest, unless we are at liberty to suppose that the Mohammedan era was in use in Georgia—as in other parts of the Christian east—which would give us a date corresponding with A.D. 1213.

On the carved stone which forms the lintel—or rather the tympanum—of the west door of the church, are two very remarkable inscriptions. I translate them as curious memorials of the Georgian Christianity of the Middle Ages:—"In the name of God, I Okra, son of Gabatzia, have offered 100 botnats . . . to establish for ever an aghape for the first Lord's Day of the Pascal full moon. Whosoever shall alter this institution is anathematised by the mouth of God."

The botnat was a coin of the Eastern Empire, which derived its name from the Emperor Nicephorus Botoniates, who reigned from A.D. 1078–1081. The other, beneath the preceding, is still more curious:—

"In the name of God, with the assistance of the most holy mother of God, and S. Saba, I John, spiritually blessed, the son of Ghaw, of my own free will, being in full possession of my faculties, have offered to S. Saba my estate of Tzikhis-Djouan, without reserve, with the fortress, the church, the waters, the woods, the forests, the royal demesnes, the corn-lands, the vineyards, in one word, all. No one has any claim on them, my father himself had offered them . . . except my portion. The principal of the monastery, who partakes in this benefaction, will not refuse me religious priests (to celebrate). Whoever shall take away from S. Saba my estate, he shall make satisfaction for my sins. May his soul . . . in his unfaithfulness to S. Saba. All this that is written is enough, and more than enough. The *lata* shall celebrate for ever the agape written on the door. Whosoever shall alter this is anathematised by the mouth of God."

Beneath this, again, in large, deep cut characters, is the dedication of the door itself: "Lord God, receive this door as Thou didst receive the obol of the widow. God have mercy on the pilgrim, George Malé. Amen."

At the side of the great charter is this: "Lord, have mercy on Tarkha Tbéli. I have offered to S. Saba of Tzikhis-Djouan my estate . . ." Unfortunately none of these names are known to history, so that they determine nothing as to the date of the church.

I proceed now to the other buildings. Adjoining the porch on the south side, and so covering the west front of the south aisle is a small Lady-chapel (of our Lady), said to have been built before any of the others. It has no exterior inscription, but within, in fresco, are the portraits of Sargis and his two sons Beha and Chalwa. This is important, as fixing approximately the date of the building: for Sargis of Djag is the prince who first established the independence of the atabees, under King David V. He died in A.D. 1285, and was succeeded by his son Beha I., whose son, Sargis II., we have already seen depicted on the wall of the south transept.

Attached to S. Mary's and abutting on the south wall of the great church, extending as far as the transept, is the chapel of S. Marina, not more recent than the others. It is distinguished by a narthex, which covers its west front, and has a separate lean-to roof. The arabesques at the east end of this chapel are remarkably rich, and many loose stones lying on the ground are exquisitely chiseled. On the north wall is the following inscription: "Lord supreme, Divine Christ, who exalteth those who glorify Thee, exalt in both worlds our Lord Beka, chief of the mandators, and his sons: who has deigned to grant a place of sepulture to us, unworthy to be his dust; to Laswir, son of Laswir, and his brothers." Under this inscription are full-length portraits of the three brothers, Swibat on the left, Laswir on the right, entitled, chief of the *msakhours*; between the two Nicolas in a monastic habit; to whom, probably on this account, the place of honour is assigned. Opposite to these under a window are the figures of S. George, S. Demetrius, and S. Theodore.

This, then, was a mortuary chapel of these three brothers; and the state of the ground in the middle of the building seems to indicate that there was formerly a sepulchral vault beneath the pavement. Beyond, i.e. south of this church of S. Marina, is the small chapel of S. George, on the front of which M. Brosset saw a rude carving of S. George and the Dragon, which is now lying among the rubbish of S. Marina's Church.

This chapel is very diminutive, being only 13 ft. 4 in. long, by 8 ft. 2 in. wide. But it has a north-side-chapel, 10 ft. 6 in., by 5 ft. wide. This tiny chapel has an altar in situ, similar to that in the north chapel of the cathedral, i.e. a square abacus, resting on a cushion capital, supported on a round shaft, entirely of a Norman type. The dimensions of this altar are 3 ft. 2½ in. high, the table being 1 ft. 9½ in. long, 1 ft. 3½ in. wide. I thought it was a curiosity of diminitiveness, which led me to take the measures. In the east apsidal window of this chapel was a small stone model of the Church of the Resurrection at Jerusalem, another record of the spirit of pilgrimage. This stone bore an invocation of spiritual blessings on the deacon Gabriel-Bagrat.

This Church of S. George was erected by one of the superiors of the monastery, as an inscription on its west front attests. "In the name of God, I, Grigol Naphchounis-Dze, Superior of the holy brothers who dwell here at Saphara, have built this small chapel in memory of my sinful soul, to the end that the Lord may, through the intercession of S. Saba, the illuminator of monasteries, draw me from the midst of those on His left hand, and count me among those on his right hand. The Lord have mercy on Grigol, the builder of this."

I have further to notice a very small mortuary chapel, at the north-east of the church of S. Saba, said to have been the depository of the abbots. It has three rows of vaults, now exposed, and filled with skulls and human bones.

To the west of the large church is the belfry, consisting of a polygonal lantern, to which there is an ascent from the exterior, while the ground floor is occupied by a small chapel, dedicated to S. John Baptist, over the door of which, on either side of a Greek cross, is this brief inscription. "S. John Baptist, have mercy on Joseph of Djag and his sons. Amen." The tomb in the chapel is doubtless, that of Joseph, otherwise unknown to fame; but the fortress of Djag is known as the cradle and nursery of the race of the Georgian atabegs, on the right bank of the Troblanha (or Djagis-Tsqual) to the north-west of Akhaltsich.

The last chapel I have to name, is that of S. Simon (Peter), close to the northern entrance; very small, and remarkable for nothing but the exquisite beauty and solidity of the masonry, which, indeed, it shares with all the other sacred edifices. The Prince Tomanoff informed me that this stone must have been quarried very many miles—I think he said as much as sixty miles—from this spot, as there is none to be found nearer. It is a fine, compact lime-stone, with a rich pink or rosy hue, which imparts a glow of warmth to the whole of the buildings.

The castle, which crowns the steep at the north-west of the church, and forms an imposing object, presents nothing worthy of special remark; and I believe I may bring my over-long description to a close, when I have mentioned that absolutely nothing remains of the domestic buildings of the monks, except fragments of walls and foundations, among which I liked to fancy I could identify the refectory not far from the small chapel of S. Peter.

TSOUNDA.—We must now ascend the River Kur some twenty miles, passing the romantic village of Khertwis, with the fine ruins of its once magnificent castle, situated on a bold, rocky promontory, formed by the confluence of the Tapravanie and the Kur, until we arrive at the extensive ruins of Tsounda in the midst of a district full of interest for a geologist. The village is situated on the right bank of the Kur, which here makes a considerable bend to the south. But we are, at present, only concerned with the church, which stands at the outskirts of the modern village, entirely abandoned to decay, though still capable of complete restoration at a moderate outlay. It is of the same type as that of Daba, already described as the model of village churches; but it has some features peculiar to itself, which I proceed to describe. It is based on an artificial foundation formed of three or four courses of very large stones, rising to a height of ten or twelve feet, and is thus completely isolated, nor are there any indications of the steps by which the ascent must formerly have been effected. The Romanesque doorway in the west front is stopped with solid masonry, laid in regular courses, and in the centre is a cross richly carved, with bunches of grapes suspended from the arms. Over the door is a single window, and one on each side, similar to those of Daba, with arabesque bands equally rich. This door is in the wall immediately overhanging the precipice. On the south side the church appears to have been based on the natural rock, which rises abruptly from a small plain. Here, in later times, a porch has been constructed, of irregular form, giving entrance into the church under a flat dome, very richly carved, but now much decayed. The door is flanked with shafts of very peculiar character, baluster shafts they may be called, but they more resemble the bed-posts of the Jacobean period, than any known order of classical or Gothic art. The church is about 30 ft. long by 20 ft. wide, divided into two bays by flat pilasters, with an apsidal termination; the outer wall being, as usual, rectangular. But the most notable feature of this church, is a small court on its south side, surrounded with a wall some eight feet high, which is pierced with loopholes, and was evidently not only intended but actually used for a bastion, as the marks of balls and bullets are still to be seen on the outer face of the masonry; another of the numerous tokens that exist throughout this country of the hard, and sometimes desperate struggles, by which these chivalrous Christians maintained their faith for many centuries against the vastly superior forces of their Mohammedan invaders from the south. The church, unfortunately, is not dated; but from its masonry and ornamentation, I should be disposed to assign it about the same date as the church of Daba, i.e. the first half of the fourteenth century. It is now called S. George's Church, but an inscription on the tympanum of the western doorway, informs us that it was dedicated to S. John Baptist, by Itchkihi son of Gourgien, a name unhappily not known to history.

(To be concluded in our next.)

ARCHITECTURAL PUBLICATION SOCIETY.

THE annual general meeting of this Society was held at the rooms of the Institute of British Architects, on Monday evening, when there was a numerous attendance. Amongst the gentlemen present, we noticed Professor Donaldson, Messrs. Arthur Ashpitel, C. C. Nelson, James P. St. Aubyn, Benjamin Ferrey, J. W. Papworth, Edward J. Anson, Harry R. Newton, Octavius Hansard, T. J. Willson, George R. Burnell, Joseph Jennings, Charles F. Hayward, J. P. Seddon, James Thomson, Horace Jones, C. J. Ferguson, Charles R. Bedells, &c. Mr. ARTHUR ASHPITEL was unanimously called to the chair.

Mr. CATES then read the report for the year, which stated, that in their last Report the

Committee alluded to the delay which might possibly arise in producing the text intended to be issued for the previous year (1860); their anticipations have not been unfounded; they have, as yet, only been able to prepare one part, completing the letter F; but the second part is in a forward state, and will be issued at the earliest possible period. The preparation of the manuscript is undertaken by gentlemen much engaged in professional duties; and the Committee, therefore, refrain from more than urging on them an early attention to the claims of the Society. The careful revision by others, and the requisite searches and references to authorities, occasion, not unfrequently, a stoppage of the whole work in its printing, sometimes extending for weeks together, while some important question is being investigated. There is no doubt, that by neglecting the precautions thus taken to secure accuracy, a quicker issue might be obtained; but the Committee hesitate to alter the present arrangements, lest the work might be rendered of less authority and be less esteemed. The flattering notices with which the last part has been received, show that, although so long delayed, the execution is not inferior to previous parts, nor has the high claim of the work to general support been in any way diminished. The illustrations to be issued for 1861 have, for a long time, been prepared; and would have been issued prior to this meeting, had not the claims of important matters, connected with the International Exhibition, diverted the attention of one of the lithographers from his engagements with the Society, thus delaying the completion of the part: nearly all the plates are now printed, and, therefore, the part will soon be ready for distribution. It will contain the following plates: Farm-Buildings; Fountain; Groined Roof (2); Half-Timber House; Lych Gate; Metal Work (2); Mosque; Pavements, coloured (2); Pavements, in outline (2); Porch. The subjects comprised in these fourteen plates have been selected from the portfolios of Messrs. Bowman, R. S. Burn, F. P. Cockerell, J. T. Christopher, G. Goldie, O. Hansard, R. J. Johnson, T. S. Pope, J. P. Seddon, G. Truefitt, and J. W. Walton, who have kindly placed their valuable collections at the disposal of the Committee. To all these gentlemen the thanks of the Society are due, but more especially to Mr. Henry Bowman, of Manchester, for the liberal manner in which he has permitted a selection to be made from his important and unrivalled series of measured drawings of the marble pavements of St. Mark's, at Venice; from this valuable source the Committee have secured materials for the two coloured plates, and have themselves to express their obligations to Mr. Bowman for his kindness in materially assisting them, not only in the arrangement and reduction of the examples for, but also in superintending the execution of, the plates, so as to secure the proper colours in printing. These subjects, from their well-known value, have appeared to the Committee sufficiently important to warrant them in expending a larger amount than usual, by adding to the twelve plates ordinarily issued, two coloured impressions of these designs, showing at a glance the key to their formation; and thus being likely to prove serviceable to the designers of similar works. To the last part issued there was prefixed a list of terms proposed for insertion in the next part of letter press, and contributions and suggestions were invited from their friends who might have notes on the various subjects. The Committee hope that the subscribers will evince their interest in the work by communicating any information they may possess, and the labours of the writers will be thus materially assisted, and the "Dictionary," at the same time, usefully increased. A suggestion which lately appeared in one of the Architectural Journals, that the back stock should be sold at a reduced price to provide funds for the completion of the undertaking, has afforded the Committee an opportunity of publicly renewing their pledge, that no portion of the works of the Society shall be sold under the subscription price (hear, hear), and the continued accession of new subscribers convinces the Committee that the course they have taken is approved, and that it is the only one by which the Society could be maintained in a sound and satisfactory condition. The arrangements which were commenced in 1860, and by which new subscribers were permitted to spread their subscriptions for past years over a considerable period, continues to receive general approval, and it is with much gratification that the announcement is made of forty-two members having availed themselves of this arrangement. If anything were required to show more decidedly the character which the work has obtained, the Committee could refer with much satisfaction to the manner in which it was taken up by his late Royal Highness the Prince Consort, who, when the work was submitted for his inspection, was graciously pleased to bestow on it a careful scrutiny, which resulted in the order for the supply of the book to three of the Royal Libraries. Among recent accessions to the list of subscribers may be mentioned his Grace the Duke of Buccleuch; Sir Watkin W. Wynne; Mr. Henry Thomas Hope; the Corporation of the City of London, for the Guildhall Library; the Council of Patents, &c. The balance sheets appended to this Report showed the receipt and expenditure on the several accounts; and that the balance applicable for completing the issue for 1860 is £277 18s. 8d., and for 1861, £279 15s. 6d.; the total balance in hand being £293 8s. 6d.

After a careful review of the position of their work, and of other similar undertakings, the Committee are fully convinced that, notwithstanding the delays, they are comparatively but little in arrear; and whilst they fully sympathise with their fellow subscribers, in the anxiety that all must feel to reach the termination of their labour, they entertain a deep conviction that it is their duty, as well as the true interest of the Society, to study far more anxiously how to sustain the excellence of the work, than how to hasten it towards an unsatisfactory conclusion.

The CHAIRMAN moved the adoption of the Report, and Mr. GEORGE R. BURNELL seconded the motion, which was carried, and after a lengthened conversation the report was unanimously adopted.

Votes of thanks were passed with acclamation to the Committee, the honorary treasurer, the honorary secretary, and the Chairman.

PROPOSED RESTORATION OF ST. MARY'S CHURCH, GUILDFORD.

IT is proposed to restore the ancient Gothic church of the Blessed Virgin Mary, in Guildford, one of the finest and most interesting ecclesiastical structures in Surrey, and the Archaeological Society of the county has been officially asked, through the local secretary, to authorise the proposed restoration, and to give its advice on the matter. A special meeting of the Society was accordingly convened, to consider the application, which was fully and carefully discussed. The result was that the honorary secretary of the Society, Mr. Sass, has written to the applicants, stating that the council of the Society had the pleasure of acknowledging the compliment offered to them, in the solicitation of their advice on the contemplated repairs of the church; and that at a meeting especially convened, the council, after much consideration, had come to the conclusion, that greatly as they value the preservation of ancient buildings, the rules of the Society place it out of their power to take active steps tending to interfere with any existing ancient fabric, especially that of St. Mary's Church, a building possessing in its present condition so very many interesting features. The only suggestion the council felt it at present possible to offer was, that in any works that may be resolved upon, the utmost care should be taken to avoid the not infrequent result of modern restoration, namely, the destruction of the original characteristics of the ancient pile. This church, which is 100 ft. long, and 62 ft. wide, and has three apsidal ends, was built on the solid rock, in the reign of Stephen. We have been informed that the proposed restoration is to be entrusted to Mr. Lower, architect. The estimated expense of alterations and repairs in the nave of the church, including reseating and reflooring the interior, rebuilding the whole of the south wall, restoring the whole of the windows of the north and south aisles, and recovering the roof, is £1,520; while the restoration of the whole of the eastern portion of the church, or the three apses, which is also contemplated, will involve a further outlay of £1,000. We trust that the utmost care will be exercised in the restoration, and that no niggardly disposition will be exhibited in the provision of ample funds, so that a becoming restoration may be effected, and everything like the destruction of a fine architectural monument entirely avoided.

CHURCH, CHAPEL, SCHOOL, AND OTHER BUILDINGS.

GREY FRIARS' CHURCH, READING.—The work of restoring this old building is progressing rapidly. Now that the Bridewell walls have been removed, it is discovered that a large portion of the stone work is in a good state of preservation; and all the old works that can be safely left will not be moved. The arches and pillars, with one or two exceptions, are complete, and in excellent condition; and while we may have regretted that the building had been so long converted to such a sacrilegious use as that of a borough Bridewell, there is no doubt that that use has been the means of largely protecting it from decay. The flint work on some of the outer walls is also in a good state, and will only require "pointing;" and there is also much of the external stone work perfect. The visitor can now obtain some notion of the noble proportions and former beauty of the church, and, from the way in which the work has been so far carried out, we have every confidence that the building will be faithfully restored. We are glad to learn that the Rev. W. W. Phelps, through his architects, Messrs. Poulton and Woodman, has succeeded in purchasing a piece of land from Mr. F. M. Slocombe, on the north side of the church, for the purpose of building a transept, to correspond with one on the other side. Portions of the old floor have been found; and it appears to have consisted of small red tiles, coated with a yellow enamel. Contracts have been entered into with Messrs. Wheeler for the stone work, amounting to £1,885, and Mr. Shepherd, for laying on the roof, carpenters' and tilers' work, for £899, the work in both cases to be completed at Christmas next. The contract for the internal fittings has not yet been settled.

FROME CHURCH.—PROPOSED RESTORATION.—The fine old parish church of Frome is now in course of restoration. It is a good specimen of the old parish churches of England, of which Somersetshire boasts not a few. The first church was built and endowed by Althelm, Bishop of Sherborne, in the time of Ina, King of Wessex, A.D. 785. The first incumbent of whom we hear was Reinbaldus, who had the good fortune to be Chancellor to King Edward the Confessor, and who was no less a favourite with William the Conqueror. Reinbald is mentioned in the "Domesday Book," as priest of Frome. Henry I., into whose possession all the lands of Reinbald fell, and among them those of Frome, passed them over to the foundation and endowment of the Abbey Church of Cirencester; and from that time, the abbots of that monastery supplied a vicar to Frome. In after ages the lands passed (in the reign of James I.) into the hands of the family of Thynne, who have ever since enjoyed the patronage, advowson, and right of nomination to the vicarage. In later times this church has become famous as the burial-place of one of the best and most faithful confessors of the English Church—we allude to Thomas Ken, Bishop of Bath and Wells. "He had desired that, wherever he might die, he might be buried in the churchyard of the nearest parish within his diocese, and be carried to the grave by the six poorest men in the parish." And this wish was fulfilled. He lies under the window of the chancel. A brass tablet has been placed in the chantry chapel adjoining, together with the gift of a painted glass window, recording the life of Ken. This touching inscription appears upon it—"Imprisoned by one king, deprived by another." The church has, of late, been pronounced unsafe, from mere old age and decay of time, and now contributions are solicited for its restoration. The chancel was restored, some fifteen years ago, by a committee, over which Mr. Markland, of Bath, presided. Those who reverence the memory of such a confessor as Ken, as well as those who sing his hymns—and in what church are they not sung?—will, we hope, contribute to this good work. A man who stood so distinctly before the Church, as a representative of the faith, opposed in one extreme to James II., and equally, on the other, to William III., and yet suffering at the hands of both, merits not a little at our hands. The parishioners, in public vestry assembled, have confided the work of restoration entirely to the hands of their present vicar (the Rev. W. J. F. Bennet). They, with others, have contributed already £2,500, but it is feared that at least another £2,000 will yet be required.

CHAPEL AT NEW KNUTTON.—The denomination of Christians known as the United Methodist Free Church having determined to erect a place of worship at New Knutton, near Newcastle (Staffordshire), recently purchased a site for that purpose in a convenient part of that rapidly increasing village. Mr. Tonge, of Newcastle, has contracted to erect the edifice for £170. The dimensions of the building will be 30 ft. by 25 ft., and about 150 sittings will be provided. The corner-stone was laid on Monday afternoon by Mrs. W. Lawton, of Silverdale, and the ceremony appeared to create much interest, a large number of persons being present to witness it. After devotional exercises, the stone (under which was placed a bottle, containing a copy of the connexional principles, a copy of the circuit regulations, the names of trustees, and the name of the person laying the stone) was lowered and adjusted. Mrs. Lawton then declared the corner-stone to be laid.

BAPTIST CHAPEL, WILLENHALL.—The foundation stone of a new Baptist chapel in Upper Lichfield Street, was laid on Monday by the Right Hon. Lord Teynham. The chapel, which has been designed by Mr. C. Manton, of Wolverhampton, will contain 556 sittings, and the schools at the back may at any future time be added, which would increase the sittings by 250. The total cost will be £1,600, and it is expected that the building, which is being erected by Mr. D. Evans, builder, of Wolverhampton, will be completed by Christmas. Lord Teynham laid the memorial stone. It was placed in the front of the building, and bore the following inscription:—"This stone was laid by the Right Hon. Lord Teynham, on the 19th day of May, 1862." Beneath it was placed a glass bottle, containing several documents.

WESLEYAN CHAPEL, WALSALL WOOD.—On Monday the first stone of a new Wesleyan chapel was laid at Walsall Wood, by Mrs. B. Bloomer, of the Grove, Pelsall. A silver trowel and a mahogany mallet had been provided by a number of ladies, and were presented to Mrs. Bloomer by Mr. John Brower. After the stone was laid, the Rev. William Naylor, the chairman of the Birmingham district, and the oldest minister in the Methodist church, delivered a most impressive address, and gave a most comprehensive summary of the Methodist doctrine. The design of the chapel is of the early English style of architecture, and it will cost about £100, nearly £300 of which has been promised.

TOUCHEN END CHURCH, BRAY.—On Friday last, the church of Touchen End, Bray, was consecrated with the usual solemnities. This is the third additional place of worship erected in this extensive parish, within the last seven years. Touchen End, a hamlet on the White Waltham border, is more than two miles from the parish church; the greater portion of its population, therefore, could not, without much inconvenience, avail themselves of its services. To remedy this evil, the new Church of Holy Trinity has been erected, chiefly through the exertions of the vicar, the Rev. J. E. Austen Leigh, aided by the munificence of one who still continues to take a lively interest in the flock dear to her late husband. The church, which will accommodate about 160 persons, consists of nave and chancel, and is constructed of red and black brick, in the decorated style, with Bath stone dressings. The chancel window is adorned with stained glass, of geometrical design, and the south windows of the nave are filled with quarries, surrounded with coloured borders. Behind the altar, is a handsome reredos of stone, diapered, and relieved with blue and gold. There is a nicely-placed credence in the north wall, adorned with tracery and symbolical clusters of grapes, and ears of corn. The sanctuary is paved with Minton's encaustic tiles. The altar rails are of stained deal, as well as the other fittings of the church. The front, of Caen stone, is octagonal, and inlaid with coloured marbles. The oak porch on the north side, is well proportioned, and imparts a pleasing and picturesque appearance to the building. As a whole, the church is as chaste as it is unpretending, and reflects the highest credit on all concerned in its erection. Annexed to the church, is a neat school and teacher's residence, harmonising with it in their general character.

STAPLEFORD.—The nave and aisles of this church having lately been restored and partially rebuilt, will be opened on Thursday, June 12. Collections will be made at the offertory in the morning and after the evening service, in aid of the fund for restoring the church, in which there is a deficiency of about £150.

THE CATHEDRAL OF GLASGOW.—We have heard of the safe arrival of the painted glass for the east window of one of the noblest Gothic monuments in Scotland, Glasgow Cathedral. The figures in the new window, the gift of the Crown, represent the Four Evangelists, and are from the designs of Professor John Schrandolph, whose works in fresco are well known. Another window of special local interest, the gift of the member for Glasgow, Mr. Buchanan, and of Mr. Hamilton, of Minard, has also reached the cathedral in safety. The three subjects are taken from the parable of the King and his servants, and have been designed by Mr. George Fortner, the author of several windows already in the cathedral.

PENNICUIK FREE CHURCH.—The foundation stone of the new Free Church at Pennicuik, near Edinburgh, was laid on Tuesday, by Duncan Cowan, Esq., of Beeslock. Mr. Cowan stated that the cost of the new edifice would be £2,050, of which there had already been subscribed £1,844, and £1,004 8s. paid up. The new edifice, which will occupy a site of much beauty, in the vicinity of fine natural scenery, will, when completed, be a great ornament to the neighbourhood in which it is to be placed. Its proportions will be handsome, its style of architecture in keeping with the locality; and a steeple of one hundred feet in height will give to the building an elegant and distinctive character. The church will be seated for 600 persons. The design of the edifice is taken from plans furnished by Mr. Frederick Thos. Pilkington, architect.

ST. CUTHBERT'S, DARLINGTON.—The faculty enabling the commissioners appointed to carry out the work of restoring the ancient and fine old parish church of Darlington, to commence operations, has been received. The subscriptions now amount to £3,302 12s., which will more than cover, according to the estimate of Mr. George Gilbert Scott, the architect appointed to make the alterations, that portion of the work which it has been determined to carry out immediately. The estimated sum is £3,250, comprising £1,550 for restoration of building, and £1,700 for re-pewing. The total estimate to put the edifice in thorough and substantial repair, as well as to make it permanently safe and secure, amounts to £6,200, but the difference between the two estimates is for work which will either admit of some delay, or has been abandoned—perhaps, for ever, but certainly for some considerable period. With a view to promote the object, the Architectural Society and Archaeological Society of Durham and Northumberland have determined to pay a visit to Darlington on Tuesday, the 3rd of June, and Mr. Scott has consented to read a paper on the prominent architectural features of the building; the Rev. J. G. Pearson, the incumbent, to read a paper on its history; and Mr. Longstaff, of Gateshead, and Mr. Abbott, of Darlington, to exhibit and speculate upon some ancient coins in their possession. A number of the members of the Yorkshire Society are expected to join them.

MONUMENT IN YORK MINSTER.—A very elegant Gothic mural monument is now being erected in the south aisle of the choir of York Minster, bearing the following inscription:—"To perpetuate the Remembrance of Two

Members of this Cathedral Church, departed to the mercy of God: William Mason, Canon Residentiary, and Rector of Aston, whose poetry will be his most enduring monument; born, 1724; died, 1797; and his nephew, William Henry Dixon, Canon Residentiary, and Vicar of Bishopthorpe; born, 1783; died, 1854; this Monument is erected by Mary Ann Dixon, widow." This monument has been executed by Skidmore, of Coventry, whose screen in metal work for Hereford Cathedral forms so prominent and attractive a feature in the International Exhibition. The monument now being placed in York Minster is in the same style of workmanship, and will form another to the many beauties of that noble cathedral.

ST. JOHN'S EPISCOPAL CHURCH, EDINBURGH.—A stained glass window, of great beauty, both in the design and in the colouring, has just been erected in this church, by Mrs. Gray, of Carsegray, in memory of her deceased husband. There are three distinct subjects represented on the window—the chalice, surrounded by vine leaves and bunches of grapes (emblematical of Christ, the true vine); an *Agnus Dei*, of the same design as that in Merton College, Oxford (emblematical of the Lamb of God, that taketh away the sin of the world); and (what forms the chief picture on the window) the proclamation of the "good tidings of great joy," by the angels, to the shepherds, on the plains of Bethlehem. The window was executed by Messrs. Chance, of Birmingham.

WALSOKEN.—The laying of the first stone of the chapel-of-ease at New Walsoken, took place yesterday (Thursday) afternoon, Mr. Young, the Mayor of Wisbeach, performing the ceremony.

WORCESTER.—The Baptists of Worcester have purchased, for 2,000 guineas, some property in Nicholas Street, in that city, for the site of a new chapel.

MELBOURNE.—The *Melbourne Herald* says that "the Wesleyan Methodists have built for themselves the finest ecclesiastical structure in Melbourne—a cathedral-like structure—at a very large cost."

EGREMENT CHURCH, NEAR LIVERPOOL.—Mr. Henry Jefferson, of Springfield, has put three large memorial windows, of stained glass, in the east end of Egremont Church, in affectionate remembrance of his late wife. Each square shows some particular incident of our Saviour's life, from his birth to his ascension. These, together with four windows of stained glass, which Mr. McClellan put in a few years ago, give the east end of the church a rich appearance. The stone work, which is very elegant, was executed by Mr. W. Ellbeck.

RESTORATION OF CHICHESTER CATHEDRAL.—Since the spring weather set in, the work at the cathedral has progressed rapidly; of the four piers which are to support the spire, one has already reached a height of fourteen feet from the ground level, and the other three are nearly as high. By the present contract, Mr. Bushby was required to have all four of the piers fourteen feet high by the middle of June, but they will be completed before that time. This looks very hopeful, more especially as the way in which the work has been done has called forth the highest encomiums from Messrs. G. G. Scott and Slater, the two architects. In the course of a few days it will be settled who is to have the contract for finishing the work for carrying the spire up to its original height.

GREAT SWEATON.—The church at Great Sweatton, near Northallerton, Yorkshire, has been reopened, after having been closed for about three quarters of a year; while undergoing a work of restoration, at a cost of about £800. The restoration has been effected from plans by Mr. G. E. Street, of London. The open roof has been slated with green, blue, and red slates alternating, and surmounted on the chancel, nave, and porch with a cross. The nave, paved with blue stone and red tiles at the corners, is provided with handsome open seats of pitch pine, varnished, &c., about 3 ft. in height. All the sittings have shelves in front, whereon to place prayer and hymn books, &c. The pulpit is entirely new, of fine limestone, mounted with a very handsome brass desk. The old Romanesque font, with its massive oaken cover, is placed on the south side of the western end of the nave. The chancel, restored entirely at the expense of the rector, the Rev. M. Anderson, jun., is paved with Minton's tiles, and has a handsome domed roof. The stalls, which are of oak, are fitted up with good taste, and the chancel is enhanced in appearance, having a very handsome and ornamental screen. An oak lectern, from which the lessons will be read, is placed outside the screen, and the prayers will be read from the stalls. The altar rails are of oak; and the altar table, covered with handsome green cloth, has a super-altar of black marble, from the Isle of Man. The reredos, both beautiful and massive, is of marble, inlaid with alabaster, with a Maltese cross of coloured marble in the centre. The east window is of richly stained glass, being a memorial. The old church had no vestry, which was found to be a great inconvenience. That is now obviated by a small but comfortable vestry, built on the north side of the chancel, over the doorway of which is a handsome scroll, with an appropriate inscription.

OPENING OF TREDEGARVILLE BAPTIST CHAPEL, ROATH.—On Thursday this place of worship was opened. The new structure, which is of a very pleasing and commodious character, will cost about £3,200, a great part of which is collected; and as a gentleman has promised with his donation of £110, to add 5 per cent. on the amount collected up to the opening services, the managers are anxious to do the best they can towards clearing the whole off, and to commence their career free from that terrible enemy—debt. Messrs. Habershon and Pitt, of Newport, were the architects, and Mr. Stride, of Cardiff, the builder. The chapel is situated between Cardiff and Roath, and is in the early English Gothic style of architecture, having a transept and nave of equal dimensions, being 70 ft. by 44 ft. There is room for 1,100 persons, and the seats are very comfortably formed as to room, &c. There is no pulpit, but a semi-circular platform, erected after the

manner of the one in Mr. Spurgeon's Tabernacle. The baptistry, which is in front of the platform, and is raised about 3 ft. above the chapel floor, is of Bath stone, with marble seats inside.

PROPOSED ENLARGEMENT OF ALL SAINTS' CHURCH, PAVEMENT, YORK.—It is proposed to extend the whole width of the east end of the church to the extremity of the present flagging, viz., 9 ft., and to give up to the board of health an equal number of square feet of the churchyard on the south-east side of the church, in order that Coppergate might be widened. Any additional ground required by the Council for the further widening of Coppergate, or at the west end of the church for the proposed Corn Exchange, the rector intimates would be sold to them at £1 a square yard, and he also claimed the right of selling the ground now used as a footpath between Coppergate and High Ousegate. The proposed enlargement is opposed, not merely because it would produce an obstruction and a curtailment of the space now used for the corn market, but also on the ground that the church at present is more than sufficient to accommodate the parishioners who attend the above place of worship. There seems to be a strong feeling in the parish against the proposed enlargement.

GENERAL ITEMS.

STATUE OF LORD MACAULAY AT CAMBRIDGE.—We understand that Mr. Woolner has been selected to execute the statue of Lord Macaulay, which is to be placed in the library of Trinity College, Cambridge.

MONUMENT TO THE LATE LADY JOHN MANNERS.—A monument, which is said to have been admirably executed, has been erected by Lord John Manners, in Rowsley Church, near Haddon Hall, in memory of his lady, who died on the 7th of April, 1854. In style it resembles the middle-pointed Gothic, having upon it the figures of a female and child, enveloped in ample drapery, in a recumbent position, with an angel at the head, apparently smoothing the pillow. These figures, with the carved capitals, panels, &c., are of white statuary, the columns of russet marble, and the other portions of Darley Dale stone. The monument is placed in the centre of a mortuary chapel erected specially for its reception, the floor of which is inlaid with rich marble mosaics, displaying the circle and the cross, emblematical of "Eternity and Religion." The whole has been designed and executed under the superintendence of A. Salvin, jun., Esq. The figure was executed by Mr. Calder Marshall, R. A., and the sculpture and architectural part of the monument by Mr. J. Forsyth, of Hampstead Road, London. The beautifully inlaid floor was executed by Mr. A. Tomlinson, of the Museum, Bakewell, and the design and the materials employed—the Derbyshire red and grey marbles—give the interior a very rich effect. The whole of the materials used are from Derbyshire. As a work of art it will doubtless be an object of interest to the tourist when visiting Haddon. Lady John is the only member of this noble family interred in this neighbourhood for upwards of 200 years.

THE McNICOLL MONUMENT.—It is proposed to erect a monument to the memory of Mr. McNicoll, the late steward of the Earl of Airlie. The form for commemoration intended is that of an obelisk, to be erected in Alyth Churchyard. It is not expected any difficulty will be found in raising a sum sufficient to accomplish so desirable an object.

THE STURGE MONUMENT, BIRMINGHAM.—Wednesday next has been fixed upon for the inauguration of the memorial statue of the late Mr. Joseph Sturge, at Five Ways, Birmingham. The pedestal is now complete, and in the course of a few days the central and subordinate figures will be placed. It was intended that Lord Brougham, a fellow-worker with Mr. Sturge in the anti-slavery cause, should have presided at the ceremony, but his lordship does not expect to be in England at the time. The borough members, Mr. Cobden, Sir J. Pakington, Mr. Adderley, and others are expected to be present.

PRINCE ALBERT MEMORIAL AT OXFORD.—The fountain in St. Giles, Oxford, with a statue of the Prince Consort substituted for King Alfred, has been given up; and at a public meeting it has been resolved to add a new wing to the Radcliffe Infirmary, to be called the Albert Wing. There appears to be £3,000 in hand for the purpose, and half as much again is required, the raising of which will constitute the memorial.

DEMOLITION OF THE MARTELLO TOWER AT GILLINGHAM.—A party of Royal and Indian Engineers have commenced the demolition of the old martello tower—erected in the reign of Charles I., at Gillingham, to protect the entrance to Chatham harbour—to make way for the proposed enlargement and extension of Chatham dockyard. The tower is of great strength, and will be destroyed by means of heavy charges of gunpowder.

THE BURNING OF QUEEN'S COLLEGE, CORK.—The preparatory notices to entitle the authorities to seek compensation from the ratepayers of Cork city for the malicious burning of the college have been served on the parties deputed by law to receive them. The estimated value of the property destroyed is £7,060, of which £5,000 is claimed by the commissioners of the Board of Works for the injury to the building and the destruction of public property, and £2,060 by the professors and students, as the value of the personal property belonging to them which had been consumed.

SEWAGE OF TOWNS.—The Select Committee on the Sewage of Towns have agreed to the following first report:—"1. That careful and exact experiments are necessary to elucidate the agricultural value of sewage, and the best mode of applying it. 2. That such experiments have been carried on at Rugby by the commission appointed to inquire into the best mode of distributing the sewage of towns, and applying it to beneficial and profitable use. 3. That it is desirable that these experiments shall be continued during the present year."

CRYSTAL PALACE ART UNION.—Subscribers of one guinea have, in addition to their chance in the forthcoming prize distribution, the right of selecting a presentation work from a copyright series of fifty art manufactures of varied design and great excellence. An illustrated prospectus may be had on application to the London and provincial agents, and at the Crystal Palace, where specimen works are on view.

PROPOSED PLACE OF WORSHIP FOR THE DEAF AND DUMB.—It is proposed to erect a place of worship for the Deaf and Dumb, a Home for the Aged, &c., in connection with the Association in aid of the Deaf and Dumb. The Right. Rev. the Lord Bishop of London is the patron, and the committee appeal for assistance to erect an edifice, which is to comprise a place of worship for the deaf and dumb, as they require religious instruction conveyed in the finger-and-sign language to be profitable; a home for the aged and infirm; and a room for secular lectures, evening reading, &c., as a counter attraction to lower places of resort.

CHRIST CHURCH, PENTONVILLE.—A recent appeal by Dr. Courtenay states that the necessity for this church, for a population of 14,000, all admit. The evils, both physical and moral, sought to be counteracted by it, are known to many, and the materials on the ground must decay if the work is not forthwith resumed. The Bishop of London, to meet the extreme urgency of the case, will consecrate the nave on its completion. £2,000 are required. Churchmen who can sympathise with their poorer brethren, and who love to see their own principles effectively applied, will rarely find an undertaking combining so many points of interest. One metropolitan parish, impressed by the importance of the objects, applied very lately, through their Churchwardens, a portion of the offertory to this church and the mission work at Pentonville.

THE CATHOLIC UNIVERSITY OF IRELAND.—The foundation-stone of the new Catholic University will be laid on the third or fourth Sunday of July. The time has been selected with a view to the presence of several of the prelates of America, on their return from the Eternal City; and, in addition to the Irish episcopacy and clergy generally, some of the most eminent of the bishops of France, and a few of the rectors of the continental universities will be present. Every grade of Catholic educational institution in the kingdom, from the village school to the University, will be represented.

OPENING OF THE NEW BRIDGE AT WESTMINSTER.—On Saturday, at the early hour of 4 a.m., the long-expected opening of the new Westminster Bridge for traffic took place. This early hour was selected as being the hour of the birth of her Majesty on May 24, 1819, at Kensington. But for the lamented death of the Prince Consort, the bridge would have been opened by Her Majesty in person. A salute of 25 guns was fired, corresponding with the number of years which Her Majesty has reigned. The new bridge is very nearly twice as wide as any of the bridges over the Thames. Within the parapet it is 84 ft. 2 in. wide. Of this the footways occupy 28 ft., the road for the light traffic 39 ft., the tramways 14 ft. 8 in., and the space between them 2 ft. 6 in. The tramways consist of iron plates bolted to timbers, and laid upon an elastic bed of cork and bitumen. The kerb of the footway is formed of Ross of Mull granite; the footway itself is of Blashfield's terra-cotta. It inclines towards the parapet with a fall of 1½ inch, and a gutter on each side carries off the water. The value of this material for paving purposes may be estimated by the fact that when rubbed with sand and water against Yorkshire stone the stone lost twice as much as the terra-cotta. The pavement is laid in diamonds, and it has a very pleasing effect. The spans of the different arches are: No. 1 and 7 arches, span 94 ft. 9 in.; Nos. 2 and 6, 104 ft. 6 in.; Nos. 3 and 5, 115 ft.; centre arch, span 120 ft. The arches are formed of seven ribs, which are of cast iron, with the exception of the crown or centre pieces, which are of wrought iron, as owing to their not being so deep at this part, greater strength of metal is required. The foundations of the bridge were formed without the use of the time-honoured coffer-dam, and the large expenditure which the construction of them would have involved has, therefore, been saved. A series of piles were driven into the bed of the river, which form the base upon which the piers were to rest. There are 145 piles in each pier, and they are driven to an average depth of 29 ft. The pressure on the bearing piles of the bridge is 15 tons, while upon the London Bridge it is as much as 80 tons; the pressure on each square foot of ground is but two tons, as compared with five and a half tons at London Bridge. The roadway of the new bridge is 12 ft. lower than that of the old Westminster Bridge, the gradient at the centre arch is 1 in 362, at the two next 1 in 123 and 1 in 75, the two next 1 in 57, and on the abutments 1 in 54. The following is a statement of the quantities of materials used in the construction of the new bridge: Timber in bearing piles, 45,700 cubic ft.; cast iron (in foundations), 1,600 tons; ditto (in superstructure), 2,600 tons; wrought iron (in foundations), 70 tons; ditto (in superstructure), 1,300 tons; Granite and other stones (in the piers and abutments), 165,000 cubic ft.; brickwork (in Portland cement), 21,000 cubic yards; concrete (in Portland cement), 30,000 cubic yards. The old bridge, which has now been superseded, has stood for 110 years, and, with very slight interruption, had during the whole of that period afforded accommodation for the yearly increasing traffic between the two sides of the river. The bridge was commenced in 1739, and after twelve years was completed at a cost of £380,500. It was originally intended to have been built of wood, and some progress was made in the foundation of the piers for a work of that description, when it was afterwards found necessary to build it of stone. Westminster Bridge was the second bridge erected in the metropolis, and at that time there existed only Old London Bridge, with its steep ascent and narrow roadway of twenty feet, a noble gateway, a chapel, and other buildings, which had stood for nearly six centuries, had twenty arches, the

whole water-way being but 450 ft. When Laylodaye proposed, therefore, to open the river by a stone bridge with only thirteen arches, he was considered a bold and rash man. He, however, succeeded, and Westminster Bridge was accounted one of the wonders of the world. The arches were thirteen in number, with two small culvert arches. It provided a clear waterway of 820 ft., or nearly double that of Old London Bridge. The present bridge was commenced in May 1851, but various delays subsequently occurred, and it was not till about the middle of 1859, that Mr. Page was enabled to proceed vigorously with the bridge, which is the fourth constructed by that engineer over the Thames.

BUILDERS' BENEVOLENT INSTITUTION.—ELECTION OF PENSIONERS.—Yesterday (Thursday) afternoon, a meeting of the Builders' Benevolent Institution was held at the London Tavern, Bishopsgate Street, for the purpose of electing three pensioners—two males, and one female. The chair was occupied by Joseph Plucknett, Esq. There were thirteen candidates, and the following were elected:—Robert P. Day, 34 Grey Street, Welberv Row, Blackfriars Road, aged 61; builder, &c. Is paralysed on the right side, with speech affected, and is totally unable to earn his living.—Thomas Lawrence, 9 Desborough Terrace, Harrow Road, aged 66; who for 16 years carried on the business of a bricklayer and builder, in Rolls Buildings, Fetter Lane; has suffered for several years from a chronic affection of the lungs, that incapacitates him for business.—Sarah Wright, 27 St. Paul's Terrace, Camden Town, aged 68; widow of the late W. Wright, plasterer, Camden Town, who died three years ago, leaving her totally unprovided for. She has hitherto entirely supported herself by her own exertions, but from ill health and defective sight is no longer able to do so.

TENDERS.

PUBLIC-HOUSE AT TONGHAM, NEAR ALDERSHOTT.

For additions and repairs to a public-house at Tongham, near Aldershot, for William Cave, Esq. Messrs. Eggar and Stapley, architects, Farnham.

F. Birch, Farnham.....£400 0 0

For building a public-house, stabling, and coach-houses at Aldershot, for Henry Hall, Esq. Messrs. Eggar and Stapley, architects.

F. Birch, Farnham.....£1,100 0 0

HOTEL, UTOXETER.

For alterations to the White Hart Hotel, Utoxeter. Mr. R. Scrivener, architect.

Sheppard, Derby.....£562 0 0 | Mathews, Leek.....£560 0 0

SCHOOL ROOM AND CLASS ROOMS, BEDFORD.

For the erection of a new school-room and class-rooms, attached to Howard Chapel Bedford.

Haynes.....£574 0 0 | Hull.....£475 0 0

Reynolds and Son.....532 0 0 | Houghton.....462 10 0

Corby.....520 0 0 | Francis and Son.....442 4 0

Norman.....490 0 0

The tender of Francis and Son was accepted, and the works, we understand, are to be commenced forthwith.

COUNTY GAOL, HEREFORD.

For additions and alterations to the Hereford County Gaol. Mr. Wm. Chick, County Surveyor, architect.

Pearson and Son, Ross.....£2,070 0 0 | Ruddle and Thompson, Peter-

Wish, Hereford.....1,562 0 0 | borough (accepted).....£1,495 0 0

Bigglestone, Hereford.....1,325 0 0

COMPETITIONS OPEN.

CATHEDRAL.

CORK.—Architects are invited to furnish designs for the erection of the cathedral of St. Finbar, Cork, at a cost not exceeding £15,000. A premium of £100 will be given for the best and most approved plan, and £50 for the second. Plans and designs to be sent to the hon. secretaries, Ven. the Archdeacon of Cork, Rev. J. N. Woodroffe, or T. M. Osborne, Esq., Cork, not later than the 1st of August next. Further information and a plan of the site may be obtained on application to W. C. Bennett, Esq., notary public and Chapter clerk, 15 South Mall, Cork.

CHURCH.

LEAMINGTON.—Plans and estimates, in sections, are required for the completion of the parish church of Leamington. The nave, the chancel, and the north transept being already built, it is intended to proceed to erect the remaining portions of the work in sections. Architects are invited to send in plans and estimates, in sections, for erecting the south transept, the vestry, the lantern tower, and the bell tower; which it is intended to build in strict harmony with the architectural style of those portions of the church now erected. Increased accommodation in the church is most desirable. A premium of £30 will be given for the best set of plans and estimates in the opinion of the Committee, which must be sent, sealed and under motto, to Mr. G. Rogers, Newbold Street, Leamington, on or before the 21st June, of whom all further particulars may be obtained.

SCHOOL.

RADNOR.—Plans and specifications are required on or before the 1st June, for the Knighton National School, Radnorshire, comprising Boys', Girls', and Infants' School and Class Rooms, together with residences for Master and Mistress. For information as to site and other particulars, apply to the Rev. J. R. Brown, incumbent of Knighton.

LIBRARY AND READING ROOMS.

BIRMINGHAM.—The Free Libraries' Committee of the Council of the Borough require plans, sections, specifications, and estimates for the erection of a free reference library and reading-rooms, lending-library and news-rooms, and gallery of art, upon the piece of vacant land adjoining the Midland Institute Building, with an elevation uniform with the said building. Intending competitors are requested to send in their plans, specifications and estimates, under cover, to Thomas Standbridge, Town Clerk, Town Clerk's Office, Temple Street, endorsed "Plans for Free Reference Library Buildings," on or before the 16th June. Particulars of the accommodation required, and of the conditions of competition, together with a lithographed plan of the site, may be obtained on application.

MEMORIAL.

GLOUCESTER.—The committee appointed to carry out the Hooper Memorial, at Gloucester, invite sculptors to submit models of designs for the figure of Bishop Hooper, which is intended to be placed under the canopy of the monument just erected in the churchyard of St. Mary de Lode, Gloucester. The models or statuettes to be carved in stone, and to be one quarter the real height (7 feet). The author of the best design, approved by the committee, will be appointed to execute the full-sized figure, and the sum of ten guineas will be awarded for the second-best design.

ALMSHOUSES.

SALTERS' COMPANY.—A plan is wanted by the Salters' Company for almshouses to accommodate twelve almswomen and six almsmen, on a plot of ground, about twenty miles in the country, comprising two acres. It being proposed to expend on the buildings and the necessary drainage a sum not exceeding £5,000, a premium of £100 is offered for the plan which shall be considered the most eligible for the purpose. The successful party will be expected to furnish a proper specification of the requisite works, and the premium will be paid immediately it is ascertained to the satisfaction of the Court of Assistants that the proposed buildings can be erected for the sum mentioned. A plan of the ground and statement as to accommodation wanted can be seen at the office of the Clerk of the Company, at Salters' Hall, St. Swithin's Lane; at which office the plans must be delivered on or before Tuesday, the 3rd day of June, 1862, before 12 o'clock at noon.

WORKHOUSE.

CARLISLE.—The Guardians of the Carlisle Union offer a premium of £50 for the set of plans approved by them and the Poor Law Board, for a new workhouse, capable of accommodating 500 adult inmates, and designed in such a manner as to allow of enlargement, without interfering with the uniformity of the external appearance. The site for the erection of the said workhouse is situated at Fusehill, on the east side of Carlisle. All plans to be sent to the Clerk on or before June 23.

HANTS.—For the works required to be done in making certain alterations in, and additions to, the Alverstoke Workhouse. Plans, &c., at the Board-room of the workhouse on and after the 15th May, or at the office of Mr. Thomas Hellyer, Bouverie House, Hyde, Isle of Wight, architect, of whom every information may be obtained, and bills of quantities may be had.

GAOL AND HOUSE OF CORRECTION.

EXETER.—The Town Council of Exeter are desirous to be informed if the present City Gaol and House of Correction can be made available so as to satisfy the requirements of the law, as to the construction of gaols and houses of correction; and they invite architects to ascertain if it is practicable that the present City Gaol and House of Correction can be so altered. They offer a premium of £30 for the plan of alterations which shall be considered the best, and if such plan be carried into effect, the architect producing it will be employed to superintend the execution of the work at the usual commission, but in that event his premium is to merge in his commission. A premium of £30 will be given for the plan which shall be considered the second best. Plans to be sent in before the second Wednesday in June.

CONTRACTS OPEN.

BARRACKS.

CHATHAM.—For improvements to soldiers' casemated barracks, St. Mary's. Tenders to be left at the Royal Engineer office, Chatham, where bills of quantities may be obtained up to Friday the 30th inst.

ALDERSHOT.—For painting externally the cavalry barracks, Aldershot, in the county of Hants. Copies of the specification, conditions of contract, and forms of tender to be had at the Royal Engineer office, Aldershot, up to the end of June proximo.

WOOLWICH.—For renewing the slating and lead gutters of the soldiers' barracks, right wing, Royal Artillery Barracks, Woolwich, by measurement. Parties desiring to tender for the execution of these works, to leave their names at the Royal Engineer office, Woolwich, on or before the 4th June.

COAST GUARD STATION.

HAYLING BRIDGE, HANTS.—For the erection of a coast guard station at Hayling Bridge, near Havant, Hants. Drawings and specification may be inspected at the Coast Guard Station, Hayling Bridge, or at the Admiralty Coast Guard Office, Spring Gardens, London, to Saturday, 31st May; and tenders received up to the end of June.

METROPOLITAN MAIN DRAINAGE.

SOUTHERN OUTFALL WORKS, CROSNESSE.—For the construction of engine-houses, a boiler-house, chimney, fifth-boists, coal-sheds, dwelling-houses, wharf-wall, sewers, and other works in connection therewith, at Crossness, Erith, Kent. Plans, &c., may be obtained at the Metropolitan Board of Works office, Spring Gardens, until 3rd July. Tenders to be sent in on 4th July.

CHURCHES, ETC.

SITTINGBOURNE, KENT.—For the erection of a new church at Sittingbourne, Kent. Plans to be seen at the office of Mr. Wimbles, Walbrook, Mansion House, London, and tenders will be received by Mr. Smith, Rose Place, Sittingbourne, up to the 31st May.

IRELAND.—For the erection of a new Catholic church, to be built at Kenmare. The parish priest will show the plans and specifications, and will receive tenders up to June 1.

CROPREY, OXON.—For the renovation and enlargement of All Saints Church, in the hamlet of Great Bourton, Cropredy, near Banbury, Oxon. Plans to be seen at the office of Mr. William White, architect, Wimpole Street, London to the 24th inst., and at 8 High Street, Banbury, to the 2nd of June. Tenders received to June 3rd, by the Rev. the Vicar of Cropredy.

CHAPELS, ETC.

USK, MONMOUTHSHIRE.—For the erection of a new chapel and vestries on the site of the present Congregational chapel at Usk, Monmouthshire. Particulars may be obtained of the architects, Messrs. W. G. Habershon and Pite, 38 Bloomsbury Square, London; Park Square, Newport, Monmouth; and Belvedere, Tredegarville, Cardiff.

PLYMOUTH.—For a new Congregational chapel and schools at Plymouth. Plans to be seen at Norley Chapel School-rooms, Plymouth. Tenders received up to 2nd June.

LEEK.—For the execution of the Stonemason and Bricklayer's work, in one Contract, of the proposed new Congregational chapel and schools at Leek. Drawings, specifications, and particulars may be obtained at the office of Mr. William Sugden, architect, to the 31st inst.

COWBRIDGE, HERTFORD.—For the taking down of Cowbridge Chapel, Hertford, and the erection of a new Congregational chapel and schools on the present site. Plans and specifications at the old Chapel School-room, and at the office of the architects, Messrs. T. Smith and Son, 33 Bloomsbury Square, London, on and after Wednesday, May 28. Tenders to be delivered not later than Thursday, June 5, addressed to the Secretary, Mr. A. Wenham, Port Hill, Hertford.

SCHOOLS.

DEPTFORD.—For making alterations and additions to the school of John Addey's Charity, Deptford. Plans and specifications may be seen, and further particulars obtained on application to Joseph Liddiard, Esq., architect, 5 Kent Terrace, Upper Road, Deptford. Tenders to be delivered at the offices of Mr. W. Sandom, Solicitor, Slades Place, Deptford, on or before 2nd June.

EVERTON.—For cleaning, painting, &c., St. Peter's Church Schools, Sackville Street, Everton. Tenders received to the 31st inst.

VILLA.

HANTS.—For the erection of a villa residence at Botley, Hants. Plans, &c., at Mr. Hardy's, harness manufactory, on and after the 22nd inst. Tenders to the architect, Mr. John Colson, St. Swithin Street, Winchester, on or before the 5th June.

ROAD-MAKING, ETC.

FINCHLEY.—For making road and drains at Finchley. Plans to be seen at the office of Mr. V. France, Solicitor, 37 New Bridge Street, Blackfriars.

DWELLING HOUSES.

STAFFORD.—For the erection of five houses, at Forebridge, for Mr. John F. Bridgwood, Wolverhampton Road, Stafford. Drawings, &c., with Mr. Henry Ward, architect, Bank Passage, Stafford.

PARSONAGE HOUSE.

ABERAYRON.—For building a parsonage house for Henfynnyw, at Aberayron, Cardiganshire. The drawings and specifications to be seen at the Feathers Hotel, Aberayron, from Monday, 19th May, until Saturday, 31st inclusive. Further information may be obtained from the architect, Mr. R. J. Withers, 51 Doughty Street, London. Tenders to be delivered to the architect, on or before Monday, 2nd June.

RESERVOIR.

BLACKBURN.—For the construction of a new reservoir, to be called the Fish Moor Reservoir, adjoining the Guide Reservoir, near Blackburn, for the Directors of the Blackburn Waterworks. The work will consist principally of an embankment of 47 feet in height, containing about 340,000 cubic yards of material, with the masonry, stone beaching, and other work connected therewith. Plans, &c., at the office of the Water Company, Clayton Street, Blackburn; and at the office of Mr. Bateman, engineer, 9 St. James's Square, Manchester, and sealed tenders (a form of which may be had on application), endorsed "Tenders for Fish Moor Reservoir," must be sent in, addressed to "The Chairman of the Company," not later than the 5th June.

POLICE STATION.

SIDMOUTH.—For the erection of a police station, &c., at Sidmouth, Devonshire. Plans, &c., with Henry Ford, Clerk of the Peace, Castle of Exeter, and at the office of Messrs. Radford and Williams, Clerks to the Justices, Sidmouth. Sealed tenders, endorsed "Tender for Sidmouth Police Station," to be sent to Mr. Ford, on or before the 3rd June.

DRAINAGE WORKS AND STREET IMPROVEMENTS.

GRIMSBY, LINCOLNSHIRE.—For the erection of the following works:—Contract No. 1. Works of drainage. For the formation of 4,000 yards lineal of glazed pipe-drains, from 8 to 18 inches diameter, with outfall sluice, penstock, and other appliances. —Contract No. 2. Works of Street Improvement: comprising about 1,200 yards super of Yorkshire stone flagging, and 14,500 yards lineal of kerbing to footways; 17,950 yards

lineal of flagging, and dwarf kerbing to channels, and 425 yards super of pitching to crossings. Plans, sections, and specifications, &c., may be seen at the Office of Mr. Joseph Maughan, Surveyor to the Local Board of Health, in Haven Street, Grimsby, until Saturday, 31st May instant, on which day Tenders for either or both of the Contracts must be delivered at the Office of the Clerk to the Local Board.

IRONMONGERY.

INDIA.—For the supply of Ironmongery for the Director General of Stores for India. Particulars may be obtained at the India Store Office, Cannon Row, Westminster, and tenders received up to the 2nd of June.

FLINTS.

MORTLAKE.—To send to the Surveyor of Highways, Mortlake, Surrey, the price per cubic yard at which Broken Flints can be delivered at the Ship Dock, Mortlake.

REPAIRS AND PAINTERS' WORK.

KENSINGTON.—For Sundry Repairs and Painters' Works to be done to the Vestry Hall, High Street, Kensington. Particulars of Mr. Broadbridge, Surveyor, at the Vestry Hall, and tenders received up to the 6th June.

SEWERAGE WORKS.

HAM COMMON.—The Local Board of Health for the district of Ham Common, in the County of Surrey, are prepared to receive tenders from parties willing to undertake the following contract:—No. 1. For providing earthenware sewer pipes, cast iron pipes, and other materials; excavating for, laying and jointing pipes, constructing man-holes, fixing gullies, and other works. Plans, sections, drawings, and specification may be seen, and duplicate forms of tender, bills of quantities, and schedules for prices, obtained at the office of John Lawson, Civil Engineer, 34 Parliament Street, Westminster. Sealed tenders, endorsed, "Tender for Sewerage Works," must be sent to the office of the Local Board, Ham Common, Surrey, on or before Friday the 6th day of June.

STOKES-NEON-TAINT.—For the construction of certain sewerage works for the Commissioners of Stoke District. Drawings and specification at the Clerk's office, on and after Wednesday the 28th instant, until Tuesday the 3rd proximo, on which day estimates are to be delivered at the office of the Commissioners.

PUBLIC BATHS.

BURY.—The whole of the works required in the erection of public baths, proposed to be built in St. Mary's Place, Bury, are to be let. Plans and specifications may be seen, and printed copies of the quantities obtained, at 2 Haymarket Street, Bury. Tenders to be sent in not later than Tuesday the 3rd of June.

LOCK-UP HOUSE, ETC.

LLANIDLOES.—For the erection of a lock-up house and constable's residence at Llanidloes. Plans and specification to be seen at the office of Mr. J. W. Poundby, County Surveyor, Kerry, Montgomeryshire.

BUILDING LAND.

CHEAPSIDE.—A valuable site in Cheapside, of about 69 feet frontage, and average 45 feet in depth, to be let on building lease, for a term of 80 years from Lady Day, 1863, suitable for the offices of a public company, or for warehouse or business premises. Tenders received up to 24th day of June. Plans, particulars, and conditions of tender may be seen on application to the Clerk, Saddlers' Hall, Cheapside, E.C.; or to Mr. F. W. Porter, architect, 16 Russell Square.

SLATING, ETC.

WOOLWICH.—For renewing the slating and lead gutters of the soldiers' barracks, right wing, Royal Artillery Barracks, Woolwich, by measurement. Parties desiring to tender for the execution of these works must leave their names at the Royal Engineer office, Woolwich, on or before the 4th day of June.

INFANT SCHOOL, ETC.

WARLEY, ESSEX.—For building an infant school and school-mistresses' quarters, at Warley Barracks, Essex. Particulars to be had at the Royal Engineer office, Colchester.

SICK WARD, WORKHOUSE.

CROYDON.—For the erection of a new sick ward at the workhouse, Duppas Hill, Croydon. Plans, with specifications, may be seen on application to Mr. John Berney, architect, North End, Croydon. Tenders must be sent to the clerk by the 2nd of June.

REPAIRS OF SEWERS, ETC.

BERMONDSEY.—For the execution of general works and repairs to the sewers, gullies, drains, &c., within the Parish of Bermondsey, for the term of one year, from the 25th day of June next, to the 24th day of June 1863. Forms of tender may be obtained at the Vestry office, in Maltby Street. Tenders received up to 2nd of June.

SEWERS.

CAMBERWELL.—For the execution of sewers works, comprising about 660 feet run, 3 ft. 9 in. by 2 ft. 6 in., in Brick Sewer, at Queen's Road, Peckham; 570 feet run, 3 ft. by 2 ft., in Grove Lane; 180 feet run, 12 in. pipe sewer in ditto. Tenders received to June 3rd.

MAIDSTONE.—For laying in pipe sewers of various sizes, in the district of Perryfields, Maidstone, about 3,500 yards in length, with cesspools, traps, gratings, and other works. Tenders to Messrs. Beale and Hoar, Maidstone, on or before the 16th of June.

RAILWAY STATION.

HANSTEAD HALL, NEAR BIRMINGHAM.—For the different works required in the erection of new station, offices, platforms, &c., at Hanstead Hall, near Birmingham, on the Grand Junction Section. Plans and specification may be seen of Mr. Woodhouse, Engineer's Office, Stafford Station. Tenders to be sent in on or before Wednesday the 4th of June.

PAVING, &c.

NEWPORT, MONMOUTHSHIRE.—For new paving, curbing, and channelling, to be laid down in Commercial Road, between the Salutation and Frederick Street. The plan, specification, and form of tender may be seen, and any further particulars obtained at the office of the Town Surveyor. Tenders to be sent on or before Tuesday the 3rd of June.

BOGWOOD.

DUBLIN.—The Commissioners of Public Works will receive, up to 12 o'clock, on the 21st June next, tenders for the supply of about 120 tons of Bogwood, to be delivered in such quantities and at such times as may be ordered, up to June 30th, 1863, inclusive, to the various government offices, &c., in the Dublin District.

MALTING AND CORN CHAMBERS.

BEDFORD.—For the erection of malting and corn chambers, Bedford. Tenders to be delivered on Monday, the 2nd June, at the office of Mr. John Day, architect, Gwyn Street, Bedford.

ENCLOSURE IRON WALLS.

CROYDON.—For the erection of a wrought iron fence or fences, about 1,500 feet in length, with iron gates, &c., for internal enclosures to the burial ground of St. John's Church, Croydon. Tenders to be sent to Mr. H. Richards, High Street, Croydon, on or before Monday the 2nd of June.

VICARAGE HOUSE.

ASKHAM RICHARD.—For the erection of a new vicarage house, at Askham Richard, near York. Plans and specifications at the office of Messrs. Pritchett and Son, York, from Friday morning the 23rd instant, where the tenders are to be delivered, sealed, and directed to the Rev. C. J. Denton, at or before 5 p.m., on Monday the 2nd of June.

CATHEDRAL.

RIPON.—For the re-roofing and groining of the choir, and the restoration of the north-west tower of Ripon Cathedral. The plans, specification, and conditions may be seen at the office of Mr. Clark, Clerk of the Works, Kirkgate, Ripon, and further particulars obtained of Mr. G. G. Scott, architect, 20 Spring Gardens, London. Tenders to be delivered before 12 o'clock on Thursday, 5th June, addressed to Samuel Wise, Esq., Solicitor, Ripon.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

Received.—R. S., R. H., G. B., A. M., L. Son, and H., Framework knitters, Dean T., W. L., S. T., J. B., T. H., T. C., G. M., J. P. J., W. D., D. H., F. C. & Co., S. & D., P. S., P. & W., W. R., "Annex" will be attended to, L. L. D., J. H., J. A., W. W., J. B., B. & Co., W. & J.

J. T.—The architects of the Grey Friars' Church, Reading, are Messrs. Poulton and Woodman.

**** NOTICE.**—The BUILDING NEWS is now published at 166 Fleet Street, where all Communications and Advertisements should be addressed.

EUSTON AND CAMDEN.

AMONG the tens of thousands of foreign visitors whom the wonders of the International Exhibition will attract to London during the present summer, there will undoubtedly be many who take an interest in the development of the railway system, and those who wish to learn of its prodigious growth in England, cannot do better than pay a visit of inspection to the Euston Square and Camden Stations. We, who are constantly in presence of the wondrous results produced by the locomotive and the rail, are apt to pass them by unnoticed, or at least without comment. The invasion of the metropolis by the "Steam Horse" has, during the last quarter of a century, produced changes, not only in the physical features of the metropolis, but also in the manners, customs, mode of living, and even in the thoughts of its inhabitants, which are almost incredible. For a century previous to the year 1834, stagnation was the order of the day; but then came the locomotive into London, and all was changed. It is singular to note the obstinate pertinacity with which the introduction of the great reformer into England was opposed. Before the locomotive could proceed on its mission of civilisation, its parent, George Stephenson, and his coadjutors, were compelled to run the gauntlet of ridicule, detraction, and slander, and there are many men of eminence still living who expended lavishly money and eloquence, in obstructing the projects of the great railway engineer.

No doubt the obstructives were, many of them at least, conscientious in their opposition to the introduction of the mighty improvement; but the lesson they have learnt should teach them, and most likely it has taught them, to be less confident, and more cautious in giving opinions adverse to mechanical inventions, and scientific discoveries. As a specimen of the argument and declamation by which the railway schemes of George Stephenson were, in the first instance, met and assailed, let us take an extract from a speech made before a Select Committee of the House of Commons in 1826, by Mr. Harrison, then an eminent parliamentary counsel: "Every part," says he, "of this scheme (the Manchester and Liverpool Railway) shows that this man (George Stephenson) has applied himself to a subject of which he has no knowledge, and to which he has no science to apply."

"When we set out with the original prospectus, we were to gallop at the rate of twelve miles an hour, with the aid of the devil in the form of a locomotive, sitting on the fire-horse. But the speed of these locomotives has slackened. The learned sergeant would like to go seven, but he will be content with six miles an hour. *I will show that he cannot go six.* Practically, or for any useful purposes, they may go something more than four miles an hour. The wind will affect them; any gale of wind which would affect the traffic on the Mersey, would render it impossible to set off a locomotive engine (!), either by poking the fire or keeping up the pressure of steam. A shower of rain retards a railway, and a snow storm entirely stops it." We need not at this time of day pause to comment for a single moment on the remarks of Mr. Harrison. They are curious, and they serve to show the ebb tide of scientific and mechanical knowledge which then prevailed. The flood tide has risen since, and Mr. Harrison has enabled us to ascertain the depth from which the tidal wave has sprung.

The greatest possible obstruction was offered, in 1831, to the proposition for forming a line of railway from London to Birmingham, and from speeches made in both Houses of Parliament, and pamphlets published out of them, it would be easy to cull passages at which their living authors would blush, and our readers would heartily laugh. Those speeches are chronicled in Hansard, whilst the bulk of the pamphlets have gone to the buttermilk, and there they may rest.

It is time for us to return to Euston and Camden. When the North Western Railway was designed, it was intended that its metropolitan terminus should be at Camden Town, but a favourable opportunity offered itself, and the Company purchased fifteen acres of ground at a point nearer to that great artery—the New Road. This newly-acquired area became the site of the Euston Station. It is only to be regretted that the noble gateway or propylæum of the latter, does not immediately face the thoroughfare named. This gateway cost no less than £30,000, and the architect who designed it fondly hoped that the station itself would be formed in accordance with its Titanic style of architecture. The station, however, is exceedingly commodious, and its great entrance-hall is appropriately ornamented by a fine statue in marble of George Stephenson. At this point, we need not say, except to visiting friends, the passenger traffic of the line is managed.

In a very few minutes, we had almost said seconds, the trains from Euston reach Camden, and here a perfect wilderness of lines converge and diverge. Mr. Robert Stephenson, not without some difficulty, induced the directors to purchase 30 acres of land at this spot, and well was it for the interests of the company that his counsels were adopted. The whole area is occupied, and the cry is still *More, more!* It may truly be said indeed of Euston, and its dependency, Camden,

that they form the greatest railway port in the world. It is the principal gate through which flows and reflows the traffic of a line of railway which cost more than twenty-two millions sterling, which annually earns more than two millions and a half, and which directly employs from ten to twelve thousand hands. Of course the number of persons to whom indirectly it gives employment is incalculably large. In mines, mills, factories, and iron-works, in steam and in coasting-vessels, workmen or workwomen are kept incessantly busy by the traffic of Euston and Camden. They form the railway metropolis, of Great Britain, so to speak. The interlacing connections of other railways have now become so numerous that it is possible to reach any part of England or Scotland, from Land's End to John O'Groat's, from this vast point of departure.

It is some few years since the provision made for the accommodation of passenger and merchandise traffic, on the North-Western Railway was estimated at the following amount of "rolling stock," and, with the exception of the first item named, it would at this moment be fair to add thereto one third more.

1	State Carriage.
555	Locomotives and Tenders.
494	First Class Mails.
420	Second Class Carriages.
342	Third Class.
25	Post Offices.
242	Carriages, trucks for letters and newspapers.
201	Guards Breaks.
260	Horse-boxes.
7385	Goods wagons.
14	Trolleys.
1155	Crib rails.
5150	Shuts.
162	Cart-horses.
41	Patent breaks.

At Camden there are extensive workshops for the manufacture and repair of carriages, trucks, &c., but at the Wolverton works, the locomotives of the line are for the most part made and repaired. When our statistics were obtained, the passenger carriages afforded eleven miles of seat room, or sufficient accommodation for 40,196 persons! The loading surface—that is to say, the area of truck-room—is extensive enough for the conveyance at one time of 40,000 tons. The annual consumption of gas at Camden equals from six to seven millions of cubic feet. There are sheds and stables which cover a space of 150,000 superficial feet, and the platforms to receive goods from railway trucks on one side, and wagons on the other, occupy 30,000 feet more.

It would be impossible to convey an idea of the miscellaneous character of the merchandise and materials which is every day and night arriving at or departing from Camden. The heaviest forgings and castings from the various iron-works of the kingdom are constantly to be seen at the heels of the "steam-horse," together with coals, timber, machinery of every kind, and last, though not least, truck loads of cattle, destined to supply, in the form of beef or mutton, the cravings of the inordinate appetite of London. The incessant comings and goings of trains of interminable length, and charged with every imaginable commodity, form one of the main wonders of Camden; and those, therefore, who wish to gain some insight as to the industrial activity of the people of England, can scarcely do better than spend an hour or two at this great station.

The extraordinary line of railway, named in the first instance the Docks Junction, but now rechristened the North London, is a great contributor to the never-ending bustle of Camden. Communicating as it does directly with the East and West India and the Victoria Docks, it bears to Camden, *en route* for every district of the kingdom, the productions of all quarters of the globe, and is the medium for exchanging for them the manufactures of this country. Those indeed who are observant of the activity, as regards goods traffic—to say nothing of the quarter-hour passenger trains—on this tributary of the North-Western Railway, and its constant interchange of goods with the great docks aforementioned, will readily agree with the inscription on the south-east transept of the Exhibition: "Each climate needs what other climes produce." Among the list of "Lions" which the coming hosts of visitors may jot down in their note-books for inspection, they will not do wrong in including Euston and Camden.

Taking the train at Fenchurch Street, and booking for Hampstead Road, three-quarters of an hour or so will suffice to deposit the tourist at Camden. There is another attraction, too; the real lions of London—in the Regent's Park Zoological Gardens—are within a quarter-hour's pleasant saunter of Camden.

INSURANCE OFFICES IN MANCHESTER.

IN our larger cities and towns of importance, we find that the offices of the numerous Insurance Companies form very noticeable

features in the architectural works of the place, and contribute in no small degree, by their richness, to render the neighbourhood in which they are situated more attractive and important. Generally speaking, these buildings are carried out in a liberal spirit, and the architect is in most cases enabled by the money placed at his disposal, to design an edifice which shall possess sufficient attractiveness and beauty to stamp it as an establishment of the first class. There is perhaps no class of buildings on which so much taste is bestowed as Insurance Offices, and none which in number, size, and ornamentation add so much to the appearance of our towns. So well is this known, that persons accustomed to travel in England seldom fail to look for them among the principal public buildings of our cities, and those, in particular, who are interested in the architectural progress of the country, are well aware of the prominent position they have taken and the great variety of examples which they present of the taste of our modern designers. In all directions they are springing rapidly into existence; some possessing attractions of no common order, while others, on the contrary, are miserable displays of ugliness, and may be classed with the numerous abortions which are so rapidly accumulating on every side. Want of money is a complaint which almost every architect makes, with an earnestness that is quite refreshing; and we should be wanting in politeness were we to suggest that in many instances an increase of funds at his disposal, instead of furnishing him with power to add to the beauty of his work, would only aggravate the evil, by inducing him to crowd a façade of a bad design with a superabundance of ornament. Yet this is really the case, and in many of the buildings erected by Insurance Companies these remarks are fully borne out by the lavish expenditure of money on misplaced and ill-designed ornaments, which could have been well spared, and their cost saved. But on the other hand, liberal supplies to men of ability are profitably invested, for by such means they are enabled to impart an increased richness to their designs without in any way lessening their beauty or destroying their purity. The spirit of rivalry existing between the different Insurance Companies urges them to erect offices which shall be superior to those of their rivals, and, therefore, in most cases, the architect is not bound by pecuniary fetters, but has at his command ample means for the erection of an imposing building. It is somewhat strange that this emulation among Insurance Companies has not manifested itself in Manchester. The desire of excelling and of producing richly ornamented and handsome façades, fit to stand side by side with the magnificent warehouses which are scattered over the manufacturing metropolis, and which so totally eclipse the warehouses of any other town or city in England, is manifested in Manchester. The offices, however, at present occupied by the various Insurance Companies, are of the most common-place kind, and as designs they are unworthy of notice. In fact, nothing seems to have been attempted, and the majority of them are quite plain, and entirely destitute of any features of interest to an architect. Generally speaking, they do not form separate buildings in themselves, but are either a suit of rooms in a block of miscellaneous offices or chambers, or they occupy the first, second, or third floors over some of the principal shops; and, instead of trusting to the attractiveness of their architectural features, as in London and elsewhere, they seem to depend solely upon the magnitude of their sign boards with gigantic gilt letters, or on their wire blinds, rendered equally conspicuous. The situation, too, of some has been very ill selected, and instead of forming prominent objects to catch the eye of all, they are in many instances placed in back streets, unnoticed except by a few, and those few in all probability uninterested, and of the wrong class to swell their funds or increase their business connections. There is, perhaps, no city in which so great a number of Insurance Companies exist, or in which so many of their offices are to be found.

The Royal Insurance Company and the London and Liverpool Insurance Company have at last disturbed the lethargy which has prevailed so long in Manchester, and we do not doubt that the example they have set will speedily be followed by other companies in that city. Two imposing edifices in Upper King Street are rapidly approaching completion, and will, in a short time, be ready for occupation. They are situated very near to each other, and their relative merits may be readily compared. In the London and Liverpool Insurance Offices a classic design has been carried out, from the designs of Mr. Walters, the architect of the Free-Trade Hall, and a number of other large buildings in Manchester. And in the Royal Insurance Offices, Gothic has been adopted, the architect being Mr. Alfred Waterhouse, who, it will be remembered, was the successful competitor of the Assize Courts, which are now being carried out from his designs, and under his superintendence.

The building erected for the Liverpool and London is the larger of the two, and has considerably more frontage. It is three stories high, the upper one being more ornamental than the two lower. Originality does not appear to have been attempted, except in the balcony in the third story, where we find a design of a decidedly Gothic character,

and though ingenious and good, yet it does not seem to harmonise with the other portions of the façade. The first story is rather plain, but substantial in appearance; the windows are square-headed and without architraves or pediments. In the second story the windows have architraves carried round them, but no entablature. In the third story columns of polished granite are introduced. Festoons of carved flowers and fruit enrich the frieze of the upper entablatures, and a balustrade surmounts the whole. The walls are of light-coloured stone. The floors are fire-proof.

The Gothic design by Mr. Waterhouse is perhaps the best example of domestic Gothic in Manchester. The building is three stories high, with dormer windows above. There are two entrances, over which are small balconies. The windows are round-headed, but the hood moulds form a pointed arch, enclosing voussiers of different coloured stone—a light blue stone alternating with the light-coloured stone of the walling. The carving to the caps of the bold shafts in the first story is a little Byzantine in form and character, but nevertheless good. Polished granite shafts are introduced in the upper stories between the windows, in one story coupled and in the other used singly. The caps of these shafts are more nearly approaching the early English style, and are considerably smaller than those in the first story. The dormers are surmounted by storks, or birds of a similar kind, which form a very agreeable termination to the gables, and have an appearance of newness, which is decidedly an improvement on the conventional forms so generally placed there. The arches of the doorways are of very good design, and some of the details are original and pleasing. The carving throughout is well executed, and a considerable amount of thought seems to have been bestowed upon the designs. The lettering between the first and second stories appears to be the weakest portion, and wants distinctness; the carving around it is not sufficiently sunk. The words, "Royal Insurance Buildings," do not stand out boldly as they should in that position, and the foliage around the letters is rather spiritless. Taken, however, as a whole, the design is most satisfactory, and far in advance of most of the domestic Gothic which is generally produced. The cornice, chimney caps, strings, &c., are well treated, and the returns, or sides of the building, which appear above the adjoining houses, are built of brick, with broad stone bands, in such a manner as to be pleasing to the eye, though less costly and less ornamental than the front. This part is, in most of our modern works, entirely neglected, and frequently forms a disagreeable contrast to the better portions. The practice of throwing all the ornament into the elevation of an edifice facing a principal street, and leaving the other sides bare and unattractive, is one which all must condemn: yet so general is the fault, that it has become the rule rather than the exception, more particularly with those who do not understand their profession, or who look more to the five per cent. from their clients, than to the praise and admiration of a nation.

In Upper King Street can be seen some of the most interesting buildings in Manchester. First, the Town-hall, which is an example of the Grecian Ionic, well designed and well executed, and undoubtedly the purest classic edifice in Manchester. It was designed by Mr. Goodwin, and finished in 1825, at a cost of £40,000. The architecture of the Temple of Erechtheus, at Athens, has been closely followed, and the quiet grandeur of the whole cannot fail to excite admiration.

Nearly opposite the town-hall is the Branch Bank of England, a massive building designed by Professor Cockerell, and completed about the year 1846. The style is Doric, though not in its Grecian purity. The effect of the whole, however, is rather imposing, and is decidedly in character with the uses to which it is applied. The New Insurance Offices, of which we have spoken at length, added to these two important buildings, form a cluster of architectural works of great interest, not only on account of their size, but also as examples of the taste of some of the leading architects, at different periods, during the last forty years.

THE CHAPTER HOUSE, WESTMINSTER.

THE restoration of the Chapter House, Westminster, is of sufficient importance to justify our reverting to the subject this week. The present appearance of the Chapter House was, by Mr. Scott, aptly described as "something between a Methodist chapel and a warehouse." Its carved imageries have been shattered, its vaulted roof destroyed, its "twilight saints and dim emblazonings" are gone. Its windows are blocked up, and its wall-paintings almost obliterated; but eyes accustomed to the beauties of mediæval art, and minds which have pondered lovingly upon them, can recall the stolen graces, and recognise, although sadly, in those mutilated forms, art equal in purity to the best parts of the venerable Abbey. The form of a chapter house is fortunately such as to render its general restoration a matter of no great difficulty. The mouldings of the windows and of the vaulting, can here fortunately be accurately defined. The splendid pavement of encaustic tiles happily remains preserved beneath the

floor. The tracery of the stalls is sufficiently [discernible, and we have, in the appointment of Mr. Scott, the best guarantee for the fidelity and care with which every operation connected with its restoration will be performed.

It is quite plain, however, that nothing can be done without funds, and the question to be settled is, where are the funds to come from. In ordinary cases the reply would naturally be,—from the Dean and Chapter. But in this case we have to remember that the Chapter House does not really belong to the Chapter. It was in Edward III.'s reign made over to the House of Commons, and was used for the deliberations of its members until the reign of Edward VI. An interest quite distinct from its architectural merit is thus inseparably attached to it; one which ought to touch the hearts of those who would not willingly see the only remaining building associated with our early parliamentary history disappear. Moreover, one of the conditions of the loan was that the "Government should keep it in repair." To succeeding Governments its ruin is mainly owing. They have lopped its beauties to fit it for their requirements as a Record Office. They neglected to preserve anything connected with it except the dingy papers which filled it; and even now, when the records are more commodiously housed in Petter Lane, the Government retain possession of the building. To return it to the authorities of the Abbey in its present state would be a scandal and a disgrace to any ministry. To restore it as the Dean and Chapter have restored that portion of the Abbey entrusted to their keeping, would be but a simple fulfilment of the original condition connected with its transfer. In former times the undertaking would have been easily accomplished. A pious old monk, "a man of great sanctity and simplicity of manners," would have had only to dream—which they could do at a day's notice—that Peter, or Paul, or some other favourite saint, had pointed out this work as peculiarly worthy of the king's goodness. "There is a place of mine in the west part [of London, which I chose and love, and which I formerly consecrated with my own hands, honoured with my presence, and consecrated with my miracles. The name of the place is Thorney; which, having for the sins of the people been given to the power of the barbarians, from rich is become poor, from stately, low, and from honourable, is made despicable. This let the king by my command restore." With such a dream Walsine persuaded Edward the Confessor to devote [his] entire energies to the building. We live in different times. Monks will not see convenient visions, and kings would not be credulous even if they did. The pious zeal which did not scorn a lie, when it served the Church's purposes, is unknown to our ecclesiastics. They can only appeal to public opinion, and the appeal of the Dean and Chapter of Westminster is in this case backed by their own useful labours. They can point to their own restorations when they ask the Government to put the Chapter House in harmony with them. They make no claim for the building itself; they only demand the restoration of its beauties. They are not moved by any petty desire to sit in solemn conclave in their ancient house, but they wish to point out to Englishmen that one of their noblest architectural monuments, filled with associations of the highest interest, is rent and torn, and wasting silently away. The building "has become," as the Bishop of Oxford said, "by long usage the property of the nation." Even in its desolation it has preserved the nation's records, and deserves on that account alone some consideration at the nation's hands. Twenty thousand pounds—the cost of a complimentary embassy to attend a foreign monarch's marriage which no one cares three straws about—would defray the whole bill. A fraction of even that sum at the head of a subscription list, would attract contributions from other influential and wealthy quarters, and ensure the accomplishment of the work. Mr. Hope put the matter in its true light when he said, "it was the Government who had originally destroyed and mutilated the building, and he did not see any reason why they should not be called upon to put the place in good tenable repair."

It is somewhat humiliating to know and to be told that such a scandal could not exist in France, that the Emperor would at once, of his own will, order its restoration, and especially so, when we reflect that our Commons' House, whose former connection with the Chapter House we seek to perpetuate, is the very power which, by its proud privilege of holding the national purse, prevents our doing so. A constitutional government may, as in this case, cause us a little inconvenience, but we can afford to suffer it. If the Government will not do the work, we have, in England, the liberty to do it ourselves; and this is just what we would have the public make up its mind to. Our faith in parliamentary sacrifice to art and tradition is not great. Our confidence in the architectural taste of Lord Palmerston and of Mr. Cowper is still less. Mr. Gladstone, with the best wishes, perhaps, in the world, would, we fancy, instinctively clutch the national money-bag, and plead poverty in a clever speech. From the Government we expect but little, if anything; and if the subject should be brought before Parliament, it would, we fancy, stir up all

the loud speaking ignorance in it. Every member desirous of shining as an economist, and of atoning for his indifference when a large grant stalked boldly past him, would open his mouth to smite the small sum. Small wits would throw their little pellets at the church. The dissenting members would be raked together by some metropolitan representative, and the proposal to do an act of simple justice and to preserve a national monument would be altogether obscured by the vast array of economical champions. We would therefore remind the committee of the Persian proverb, "to expect nothing, and thus escape disappointment:" to rely upon their own energies in awakening an interest in the venerable ruin; and if they cannot get the building restored by the Government, to obtain it unrestored from them.

The circumstance of the Chapter House—a Government building, be it remembered, lately the Record Office—becoming year after year more and more dilapidated, without a shilling being expended to stay the ravages of time, or to preserve—except accidentally, as with the boarded floor—its many beauties, strengthens our conviction that there ought to be in England a Minister of Public Works, who should be not only responsible for the expenditure of the money voted specially by Parliament, but under whose charge the conservation of really national monuments should be placed. A small sum annually voted would enable him to assist occasionally in the preservation of many interesting relics of our old English architecture. For the want of such assistance, much has already been for ever lost to us, and more has been injudiciously restored, and thus fatally ruined. In the hands of Mr. Gilbert Scott, the Chapter House, and all connected with it, will, we know, be tenderly cared for. We sincerely hope that a sufficiency of funds will second his exertions.

INTERNATIONAL EXHIBITION.

THE PICTURE GALLERIES.

THE pictures by Turner in the International Exhibition are very inadequate to give a satisfactory idea of his varied and extraordinary powers as a painter. It is true that the objection may be met by referring the visitor to the South Kensington Museum close by, or to the Turner Gallery in Trafalgar Square, but neither of the three collections separately, nor, indeed, were they brought together in one, would enable the general public and our foreign visitors to either appreciate Turner's peculiar talents, nor the bearing the gradual development of his wonderful genius ought to have upon the practice of progressive art. The selection of the pictures by him in the present Exhibition may have been guided, as we have said in our preceding article, by the desire not to confuse the unlearned by placing before them curiosities or eccentricities in painting, but our objection to the pictures which have been selected, is that they do not represent, beyond the mere classic style of composition, any distinct period of Turner's brilliant career; besides which these pictures are either so dirty or low in tone, as not to suggest even his extraordinary mode of depicting distance and atmosphere. It was well, no doubt, to avoid as far as possible renewing the impression that the works of Turner are to be judged only as incomprehensible daubs, and he, himself, as if he were a wonderful being, who had suddenly descended from the clouds well stocked with all sorts of fiery colours, which he smeared upon canvass for his own satisfaction, in a manner that no rational person could understand, and which it was very doubtful whether he could understand himself. The only way under these circumstances, to do him justice for good and rational intentions, whatever may have been his success in carrying them out, is to trace him, as regards his practice, from his earliest time. Turner commenced in the good period of English art, when the old masters were respected, and the principles laid down by Sir Joshua Reynolds were duly appreciated. The earliest efforts of Turner, when he had attracted notice, were like those of his contemporaries in water-colours, merely tinted drawings; the attempt to equal the force and power of oil-colour had not then been made. Many of his views were executed on coloured paper, the sky being represented by a little blue, the middle distance left with very little more than the general colour of the paper, and the foreground rather sharply accented with a touch or two of warm local tint. The effect thus produced would, at the present time, be considered poor and washy, but good judges would in all such works discover the indication of a great mind. If he sketched only a piece of rock with some water near it, and a bank for a foreground, there was always a broad massiveness, with a unity of treatment, that could not be passed without admiration. In course of time water-colour drawings made a nearer approach to oil pictures, and in the new practice Turner led the way, and continued at the head of the movement, until, finding that water-colours were too feeble to express his growing and lofty conceptions, he boldly took up the palette, without previous practice, and, although laughed at in the beginning, he soon became established as a leading painter in oils. From that time his wants increased with the development of his genius, and from what we see, it is but fair to assume, where he fails, or at least, where we fail to understand him, that known pigments were incapable of expressing his conceptions. Our purpose in giving this description of Turner's progress in art, is to suggest that the most incomprehensible of his works were the result of a steady progress, that is, from the most simple method employed by himself and his contemporaries in art, advancing to a

brilliant and gorgeous display of colours, in which he left all competitors behind; but as his progress was so gradually progressive, may he not in his most daring flights, be perfectly rational to his highly cultivated perceptions, and may not the irrationality be with ourselves, in consequence of our own powers being neither so sensitively formed by nature, nor so highly cultivated by practice and study as his were? A broken twig will show an Indian hunter his way through the bush where, for want of the keen eye that detects it, the European traveller would lose himself and perish. So it is with some of Turner's pictures, and therefore they should be respectfully studied with the hope of finding the clue to the labyrinth, and not passed contemptuously by, as the wanderings of a madman, for, as we have suggested, it may be doubtful which of the two is entitled to the unenviable distinction—the painter or the spectator: at all events Turner was perfectly sane when he made his will and bequeathed his "Carthage" to the nation, on condition that it should be hung by the best Claude in the National Gallery. The Trustees need not have had it cruelly skinned by the picture cleaner to give Turner an advantage, because his superiority in every respect is apparent, we should think, to the least cultivated eye. In short, the pictures in the National Gallery, at the South Kensington Museum, and his water-colour drawings, not his oil pictures, at the International Exhibition, place him far above every other landscape painter that ever lived, in the ordinary sense of the term, and as a painter of ideal or mythological subjects connected with landscape, there is no other name, except Wilson, perhaps, that ought to be mentioned as a competitor in that branch of subject. Like Michael Angelo, Turner was a giant in art, and moderate geniuses become pigmies by comparison, the moment they are so rash as to remind us of either of them.

Mulready, although somewhat spoiled by an affected tone of colour—some of his figures appear nearly red-hot—is an artist of whom Englishmen may be proud, whether his figures or his landscape backgrounds be considered; besides which, as may be seen in the present Exhibition, he draws the nude with remarkable delicacy, grace, and purity. "Train up a Child" is really admirable, particularly in the tone and treatment of the group of grim-looking beggars, which, by the way, was no doubt the original of his fine picture, now at the Royal Academy, of the negro offering to sell a toy to a child that turns away alarmed. Leslie, in attempting breadth and simplicity of colouring, too often produces a boldness of rendering, which is not pleasant, but in this respect he may compare with Willems, the Belgian painter of the same class of subjects, although he never rises to story-telling. We think Leslie's "Playing at Horses" is a remarkably happy idea. In order to judge of Barry, the visitor should be referred to his paintings in the great room of the Society of Arts, for his "Adam and Eve" in the International Exhibition is a very feeble production, and, as a historical painter, the less said about West perhaps the better. He drew with firmness and vigour, composed with skill and learning, but his colouring has no sympathy with his subject; his heads are all individual and common-place, and consequently are destitute of the elevated character and expressive dignity essential to Scriptural subjects. De Loutherbourg, who was scene-painter to Garrick, had a fine perception of the muscular flexibility and bony development peculiar to the British seaman of his day. Hence, while his sea-fights are theatrically grand in their volumes of smoke, clouds of bellying canvas, and vivid explosions, if there was a boat's crew landing troops, or sailors clinging to floating spars, they have a breadth of bearing and a recklessness of manner that no other painter ever so completely realised as the manly characteristics of the tars of old, and who won our great naval victories.

Stothard, the prince of designers, as he was called in his day, may perhaps defy competition among our foreign exhibitors for the fanciful treatment of his subjects, the facility with which he groups his figures, and not unfrequently the rich harmony of his colouring. The amiability, if we may be allowed the expression, of his drawing is injured in some degree by its want of vigour in the general forms, and precision in the marking of the joints. He is slovenly sometimes, which arose no doubt from rapid designing for booksellers, and the excellence of the engravers at that time, who could produce a very excellent plate from a very slight drawing. Stothard possessed an elegant fancy, which he exercised in his sketch-books by idealising persons he saw in the streets, as a fishwoman with a basket on her head, and such humble subjects; but this practice was not conducive to the matter-of-fact exactitude required at the present day, and therefore the peculiar excellence of Stothard is not likely to elicit much approbation; but his contemporaries collected his designs as fast as they were published, and we are no doubt often pleased with the effect without thinking of the cause.

The fame of Wilkie is fortunately preserved by the selecting such subjects as present him in his best style to the public. His admirable picture of the "Village Festival" stands unrivalled by any work in the foreign galleries, for its joyous fun and robust hilarity. Wilkie was formed on the Dutch masters, whom, in the early part of his career, he not only copied, but imitated for a living, and the legitimate use he made of the experience he acquired in that occupation, may be judged by the excellent subjects he produced, so entirely English, that no trace of the Dutch origin can be traced. It may fairly be doubted whether his visit to Spain, and consequent change of style, will not prove more injurious than beneficial to his reputation as a painter. He certainly painted with more force obtained by powerful contrasts of light and shade, than before he quitted England; but the tone of colour and want of drawing, especially in his large whole-length portraits, which he painted on his return, and became the fashion, show that humble subjects were much better suited to his talents. In them his drawing was all that could be required, but in his "Alfred in the Goatherd's Cottage"

he had displayed his deficiency for the historical composition; and in his Spanish subjects, when he attempted the masterly style instead of his former feebleness, he only substituted the wooden for the puerile. The finest of his pictures painted in the Spanish style is the "Beadle taking the Monkey-Boy to Prison," which has been extremely well copied as a miniature on an unusually large piece of ivory, to be seen in the large room of the foreign division. When we say the Spanish school, we allude to the art in the time of Murillo or Velasquez, for it is a remarkable fact that not one of the pictures by living artists in Spain sent to the present exhibition has the slightest resemblance to the style and tone of that early school, transplanted by Wilkie, and still cultivated by Hurlston, but on the contrary, they are assimilated to the modern mode of painting now prevailing amongst ourselves, and which seems to be the point to which all schools are directing their energies—namely the perfection of realistic resemblance. Looking at the tendency of pictorial art generally, with its matter-of-fact application at the present moment, we think it may be safely predicted, that those who live to see a similar collection of pictures to that now in the International Exhibition, at the end of another ten or eleven years, will find, as hero-worship is evidently on the decrease, political animosities dying away, and national convulsions becoming less frequent, that the higher style of art will yield to portraiture, domestic scenes, and landscape, and, unless an extraordinary genius should disturb the equanimity of the pictorial mind, that the picture displays on canvas of each nation will so nearly approach each other in style, subject, and treatment, that future critics will find little diversity upon which to exercise their acumen. We may, in support of this opinion, direct attention to the circumstance, that while foreigners are complaining that the English paint no historical pictures—with the exception of the French battle-pieces—the Belgians, who take the lead in the higher branch of art, have no picture in the International Exhibition more recent than the events which followed the abdication of Charles V. of Spain.

Returning for a moment to the works of Wilkie, we think, on such subjects as the "Village Festival," "Blind Man's Buff," and similar productions by which he obtained his fame, he stands unrivalled in the extent of his composition, the skill with which it was conducted, and the hearty homeliness of the prevailing sentiment, and in all of which it is well known that every figure was carefully studied from living models; but, with a few exceptions, those pictures painted in his Spanish manner will rather injure than increase his future fame.

ARCHITECTURAL ASSOCIATION.—MR. R. P. SPIERS ON ARCHITECTURE IN NORMANDY.

(Continued from our last.)

MR. SPIERS proceeded to say that he made Bayeux his starting-point for two short excursions to the small villages which lie north of it, and it is to the northern part of the Calvados the tourist should direct his steps in search of simple Norman churches. The country is comparatively flat, and the small spires or towers serve as guiding landmarks to the route. On his first visit he left Bayeux by the north-west, in a diligence, stopping at Maisons, five miles distant. After a walk of four additional miles, he arrived at Etroham, where there is a pretty little church, with a tower finely proportioned, and of the thirteenth century; but only the western façade of the original Norman church remains. At Villy there are the ruins of a small church; and Huppain has an interesting western front, and is curious for having small arcades interlaced, forming a pointed arch by their intersection; this decoration which is on the tower is very interesting, the latter being probably of the ninth century. Colleville-sur-Mer possesses a very pretty and most remarkable Norman tower; it is composed of six stories, of which the highest is pierced on each face with circular openings, a feature which very rarely occurs. The spire is of later date, and the nave and choir are of the twelfth century. Vierville has a very elegant tower and spire of the fourteenth century; the church had formerly side aisles, and was more important than it is at present. Formigny has a tower of the thirteenth century, with a double-gabled roof—a form which, in his opinion, was rarely met with in England. The tourist was reminded, when visiting this village, by a large inscription on a public monument, that it was here the English sustained a great defeat, in 1450, the consequences of which obliged them ultimately to give up Normandy, which they had held since 1417. Caumont remarks, in his "Researches in Normandy," that the church here, as also those at Belleville and St. Laintant, has a side aisle on the north only. Louvières has a spire and tower somewhat resembling those at Vierville, but having no circular tower at the corner. The nave is of the Norman style, and the spire, which is a lofty structure, is seen for miles around. Asnières possesses a tower and spire of a somewhat similar character, but more pleasing in proportion. It was formerly a Norman church; but being *restored*, a doorway is the only feature of that style which remains. The church of Englesqueville is in the Transition style of the twelfth and thirteenth centuries; the choir retains its primitive windows, but the southern wall has been rebuilt. The tower is a curious building, possessing, like that at Colleville, circular windows. The chapel at Jucoville, near Lacambe, is of the fifteenth century, and possesses some beautiful carving. The lecturer proceeded to say that he then returned by rail to Bayeux. In his second trip he left by the north-east corner of Bayeux, passing by St. Vigor, where there is a fine old abbey-gateway. At Vienne is a charming church, partly belonging to the thirteenth century; the southern façade has a rich doorway; and the tower, situated on the east, consists of four stories, the uppermost of which has a circular arch

pierced with two windows. The choir is of the thirteenth or fourteenth century. Villiers-le-Sec has a fine rectangular tower, with a staircase-tower, also rectangular, at the south-west corner, of the thirteenth century, and the choir belongs to the same period. The rest of the church is modern, and presents no feature of beauty. Tiroville has a church, with an ancient Norman doorway; the tower is of the fourteenth or fifteenth century. Bazenville, which is close to the last-mentioned structure, Mr. Spiers did not visit; but Caumont says it possesses the best-proportioned tower in the district, and is principally of the thirteenth century. The Château of Crevilly is exceedingly interesting, and very picturesque; and Caumont says it is one of the most strongly fortified châteaux in Normandy. The whole of the ground-floor, which is of the twelfth century, is vaulted with circular ribs; the rooms are very low, and serve for vestibules and cellars. The upper parts of the building are of the fourteenth and fifteenth centuries, and the façade of the sixteenth. The ancient moat has been filled up, and a garden planted in its place. The portcullis and remains of a drawbridge blocked up, may be seen at the building. Breey has a fine entrance-gateway, of the sixteenth century; but the old château exists no longer. St. Gabrielle has an interesting Norman chapel, of the eleventh century, now under the care of the French Archaeological Society; here are also an ancient priory, of the fourteenth or fifteenth century, and a tower, nearly in ruins. The gateway of the priory, and other portions of the building, have been converted to the uses of a farmyard. The lecturer, in continuation, said he visited Esquay, where there is a small church, partly of the thirteenth century, the tower and spire having been lately added. There is a fine château, of the seventeenth century, but he had not an opportunity of visiting it. Most of the villages above referred to are about four miles distant one from another. The women living in them are chiefly occupied in the lace manufacture, for which they receive but poor remuneration, a good workwoman being paid not more than a franc a day. From Bayeux Mr. Spiers said he proceeded direct to Cherbourg, the entrance to which is extremely beautiful—its hills, railway, towers, fort, trees, harbour, and shipping forming a pretty picture. He visited the port, where he saw much that is interesting in naval architecture; and inspected the museum, which contains plans of Cherbourg, as it was ten years ago, and as it is now. Leaving Cherbourg, he proceeded to visit other places, amongst them Carentan, which has a very fine church; unfortunately the nave and towers are very low, or it would be one of the finest structures in this district. St. Lo is an attractive town; the principal part of it is built on an eminence, the cliff rising almost perpendicularly by the side of a broad canal. It was formerly fortified, and most of the ancient walls remain. The Hotel de Ville, an edifice of modern construction, tells well its destination. The large church of Notre Dame has a fine façade, with two towers, but presents some curious irregularities, said to have been intended by the architect. The structure dates from the fourteenth century, the two towers are not alike, and what is called the central doorway is not in the centre. The tower on the right has a pointed arch, that on the left a circular one, though not Norman. There are constructional arches turned over the windows above the entrance doorways, which are dissimilar and of different widths. In the interior no two walls are parallel, and the choir is not in the same axis as the nave. There are some singular arrangements of the chapels round the choir. The most beautiful feature of the building is an exterior stone pulpit, with canopy of the thirteenth century; he believed there was only one other of or previous to that period existing in France. There were not many in England, he thought; he knew only of one, which was at Magdalen College, Oxford. The Church of St. Croix, of the twelfth century, which is now undergoing a complete restoration, is, or at least was, a very interesting structure, presenting a complete, though small beautiful Norman erection, with capitals. It formerly had a nave and two aisles, with circular rib vaulting, and a small circular chancel. The church not having been sufficiently large, was placed, for alterations, under the care of an architect, who has pulled down the chancel, added another division to those remaining of the nave, and put an additional side aisle, with a tower in the centre of the south façade, making a kind of façade of his own. The old part of the church has been heightened, by removing a vault, adding a triforium, and doubling the height of the original clerestory. By the side of this church are the imperial stables of St. Lo, kept up by the French Government for the improvement of the breed of cavalry horses, and preserving the Norman horse. Here he found about a hundred animals, including a few fine Arabians, and six or seven English race horses. There is a well-constructed roof in the manege or riding-school. At St.

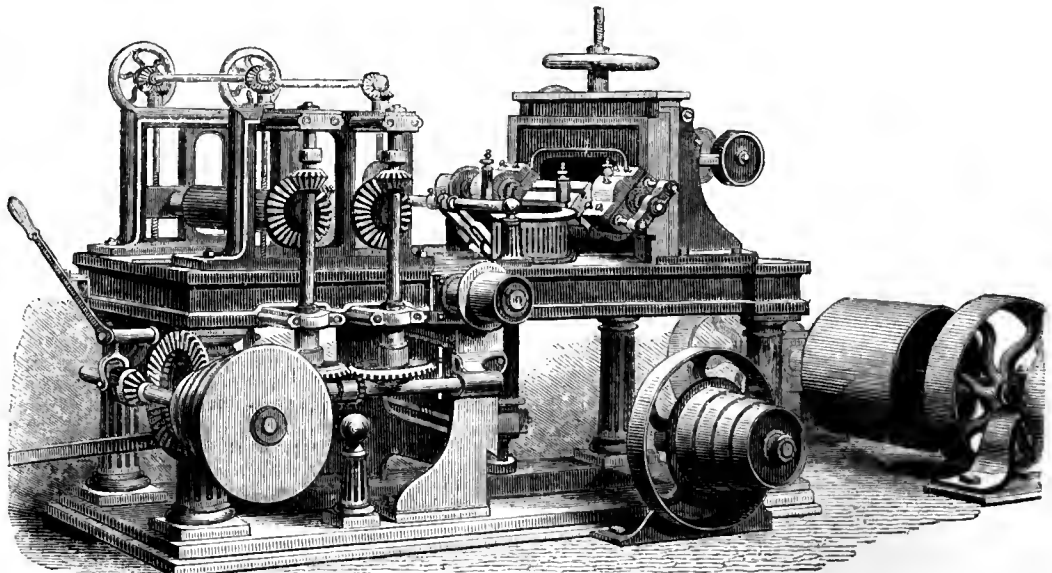
are to Lobefound several very fine old wooden houses, two of which, situated near the cathedral, and of the fifteenth century, are in an excellent state of preservation.

There being no railway south of St. Lo, he took the diligence and proceeded to Coutances, the cathedral of which, of the thirteenth century, is remarkably interesting, and is perhaps the only cathedral in France which preserves the same style throughout, having been commenced and finished by the same architect, and within a period of about eighteen years. The style is Early English: he said Early English advisedly, for it quite differs from other French cathedrals, except perhaps of Bayeux, and resembles our own English examples. It possesses two towers and spires on the façade, and a large central tower, which, as Mr. Ferguson, in his Hand-Book remarks, "requires only the crowning spire to make this group of towers equal to anything on this side of the Channel." The effect of the interior of this tower is very striking from the nave. The exterior of the choir, as seen from the Bishop's palace garden is insipid, like the choir of Bayeux. There is another church, St. Pierre, which, like the cathedral, has a central tower at the intersection of the nave and transepts, and is a unique example of a central tower of the sixteenth century (Italian Romanesque), at least for its size and beauty. There is only one tower on the façade of this church, and it is of the fifteenth century. St. Nicolas is a singular church, in which he was mistaken as to date. He had put it down as a thirteenth century building, and a beautiful specimen of its class, but an architect of the town assured him it was built in the last century, a statement on which he did not place implicit reliance, however, for the structure had renaissance pendants in the aisle round the choir, which seems to be of the sixteenth century. There are some beautiful encaustic tiles, in perfect preservation in the chapter house of the cathedral. The town itself possesses no other architectural curiosities, the houses being for the most part built in plaster. The stone of which the cathedral was built came from Caen. There are many picturesque views from the town, which is built on an eminence. From Coutances he returned to St. Lo, and thence went on to Caen; stopping, however, on the road, to visit Bretteville and one or two other villages on the route. Bretteville church has a choir of the thirteenth, and a tower of the fourteenth century. Norrey possesses a most interesting and very rich village church; it has a simple nave, transept, with chapels annexed, and a choir, with side aisles and two chapels attached. On the north side is a very elegant porch of the thirteenth century, and the nave is of the early period of the same century. The sculpture in the interior round the side aisles is extremely beautiful, and a good type of the fourteenth century. The pointed arches separating the choir from the side aisles are carried on twin circular columns. There exist in the building two stone altars, the tables resting on a solid triangular block, and the corners being supported by small columns. He next visited Cheux, the choir, transept, and chapels of which are of pure Norman, and the choir is decorated with arcades. The church at Moven dates from the twelfth century; the exterior walls are decorated at a height of eight feet from the ground, with blank arcades continued all round the building, which has a fine western doorway.

(To be concluded in our next.)

COMBINED MACHINE FOR PLANING, TONGUEING, &c.

MESSRS. Powis, James, and Co., exhibit in Class VII. in the western annexe of the International Exhibition, a combined machine for planing, edging, tongueing, grooving, thicknessing, and moulding. The



machine operates upon all four sides at one time, and although so simple in construction, it will do all the work that any ordinary planing machine can do: likewise, having a variable feed, it is well adapted for every class of moulding, large and small. The manner in which the pressure is applied to the feed rollers, gives a great facility when changes are required, to suit the various classes of work. This machine is capable of doing from the deck plank to the most delicate moulding. The cutter heads being all forged solid on the spindle, there is no fear of their flying off, and at one glance it may be seen that free access is given to all working parts. The machine will take in 12 by 5.

MR. G. A. SALA ON THE INTERNATIONAL EXHIBITION BUILDING.

AT the recent meeting of the Society of Arts, when Mr. Hawes read his excellent paper "On the International Exhibition of 1862," Mr. G. A. SALA said, as one of the public, he might be allowed to say a few words on an essentially public question. With regard to the contents of the Exhibition, he had viewed them with satisfaction, wonder, and admiration, but with respect to the building, he might, as one who had given some attention to art, say a few words. Mr. Nelson had characterised the building as a national disgrace; he (Mr. Sala) did not consider it a national disgrace, but a national mistake, and for this reason: It would be in their recollection that in 1851, all eminent men as architects and designers were called upon to send in plans for the Great Exhibition, and they all recoiled at what hideous, monstrous, and abnormal designs were sent in on that occasion, and he remembered how his eyes were horrified by some of these designs. Those designs were mediocre, common-place, every-day things; but it occurred to Sir Joseph Paxton, by what he would term an inspiration of genius, to send in the design of the Crystal Palace of 1851. He repeated, that was an inspiration of genius, and that design threw far into the shade every other architectural plan submitted to the commissioners; but it was due to the architects of the country to state that whilst the design of Sir Joseph Paxton was a marvellous combination of iron and glass, it was common-place in its form, and, as originally conceived, presented a resemblance to three packing-cases piled one upon the other, until the late Sir Charles Barry added the transept, and that addition made it the beautiful thing it was. As regarded the Exhibition building of 1862, he considered that various errors had been committed. The building was certainly not magnificent; indeed, in his opinion, it might almost be called hideous. The picture galleries certainly were light, commodious, and spacious; and albeit he agreed with Mr. Nelson that there was a want of smaller adjacent apartments, in which the cabinet gems could be displayed with advantage, instead of being lost amongst the mass of larger pictures, he must say the picture galleries of the Exhibition were amongst the grandest and most satisfactory features of that otherwise most unsatisfactory building. But in this the error was committed. They did not expect perfection in the building, but they did expect a building which would equal, if it did not surpass, that of Sir Joseph Paxton. But did they go to work the right way to get a building which should either rival or equal the former one? Were the most eminent architects of the day consulted as to the building? As one of the public he was taken by surprise—not at the announcement that another Exhibition building was wanting—but that Captain Fowke had been appointed to construct it. If ever there was a deed done in a corner, it seemed to him to be that which was done by the Royal Commissioners, or by some one, he did not know who, some mysterious body, some conclave sitting in an underground building, meeting together, wrapped in robes of mystery, who said, "Fowke, and Fowke only, is the man." But he might be allowed, whilst decidedly expressing, as he believed, the opinion of a not wholly uninfluential section of the public, that the present building was an infringement of all the canons of good taste, to say that he did not think Captain Fowke was so much to be blamed for what he had done. What more could he do? He was doubtless an able officer of the Royal Engineers; but did the Society of Arts, a hundred years ago, ask an officer of Engineers to paint the pictures in that room? If Barry had been Barry, R.E., instead of Barry, R.A., would he have been asked to paint these pictures, representing the progress of the arts and sciences? That mysterious council which he had referred to, be thought themselves that a Royal Engineer officer was an artist: they were led away by sundry sketches by Captain Fowke—probably prepared at Woolwich—for turning the National Gallery inside out—and that body fixed upon him. Hence this great national mistake—not, however, a national disgrace. That might be repaired by the speedy demolition of the building, after the purposes for which it was unfortunately erected had been served, or else by its conversion to some other useful commercial purpose. He would conclude these few remarks by expressing his admiration of the contents of the Exhibition. His opinion was that the contents of that Exhibition were not a national disgrace, but a national honour, and likely to conduce to the prosperity, the glory, and the honour of England.

INTERNATIONAL EXHIBITION.

NOVELTIES FROM COAL, IN GAS AND LIGHT.

NOVELTY! where does it really exist? Egyptian children, three thousand years ago, amused themselves with marbles and balls. The ancients utilised gold, iron, &c., and, in the instance of copper, hardened it for tools to equal our steel, an art now unknown. The turning to account

coal and its products, particularly illuminating gas, has been left to this era. Within the crust of the earth there may be stored up another wonderful formation, the uses of which will be only unfolded to a future period and condition of mankind.

The twenty years elapsing between the first and next International Exhibition probably covers a period during which there will occur three changes in the raw material for making paraffine. In 1851, the paraffine candle exhibited was made from turf. The considerable display now shown by Mr. Young, Class II., Messrs. J. C. and J. Field, Class VI., and others, of blocks of paraffine produced entirely from coal tar, prove a considerable manufacture has been developed during the past ten years. In 1871, it is probable neither turf nor coal tar will be used for making paraffine, but instead, the lately introduced petroleum, or rock oil.

On the completion of the late French treaty, the trade of Coventry was paralysed by every one appreciating the brilliancy and durability of foreign dyed silk ribbons. The many dazzling colours, now so universally admired, extracted from coal tar, on view in Class II., No. 600, &c., effectually remove doubt respecting the future splendour of British dyes; they can be equalled, but not surpassed.

For some years past steel has been superseding whalebone, once so much used, now almost forgotten. Another change has commenced: the lately introduced rock oil of Canada, as well as coal tar—both of which can be manufactured to supply all oils hitherto obtained from the sperm whale, the oleaginous linseed, and the volatile oil of the pine. The lubricating grease made from coal-tar does not become easily rancid, and is more unctuous when in contact with metals than that made from animals. Within the cases of Mr. D. Dawson, and others, Classes I. and II., can be seen naphtha for melting india-rubber, &c.; benzole, that will cause oil paint to dry as quickly as lime-wash; lamp oil, &c., manufactured from Wigan and Boghead Cannels, also from Newcastle coal.

Before the battle of Trafalgar, oil lamps lighted the streets of towns at night throughout Europe. The comparative recentness of the introduction of gas illumination allows full scope for originality. Changing to Class XIII., No. 2,973, Mr. Sugg's case contains a photometer, eudiometer, exhauster, alarum, &c. The photometer is an apparatus first invented by Count Rumford, for comparing the lighting power of gases with candles, by placing a five-foot gas argand light and a burning candle in the separate compartments of a box with a division; all the inside of the box being blackened, excepting one end, which is to be white. The power of the respective lights can be noticed on the white side, by drawing the gas-burner gradually away, until the appearance of the shadows on it of both lights are uniform. The simple law of light shows that the brilliancy produced by the burning candle and gas is proportionate to the square of their respective distances from the white side of the box. The late Baron Bunsen also invented a photometer, using a piece of white transparent cloth, with an opaque centre, the candle and gas lights being placed on each side. When the appearance of the opaque part of the cloth is similar on both sides, then the difference of the distance of the gas burner and candle from the cloth will give the relative power of their lights. The patent photometer exhibited seems to be that of employing the inventions of Count Rumford and Baron Bunsen in a combined shape. The eudiometer is an instrument for obtaining, by means of bromine, sulphate of copper, and caustic potash, the volumes of hydrocarbon vapours, sulphuretted hydrogen, and carbonic acid impregnating coal gases.

Mr. Sugg also exhibits an exhauster gauge and an alarum. The exhauster acts in the manner of a water force-pump, and the pressure of gas on the retorts is shown on a principle something analogous to the common barometer. Only water is used, which is forced up or drawn down a tube in accordance with the degree of pressure of the gas on water in a case, to which the tube forms a funnel. The rising or falling of the water in the tube is shown by means of a float on a dial.

The unsatisfactory character of the measures formerly in use for the sale of gas, drew the attention of the Legislature to the subject, and caused the passing of the "Sales of Gas Act." Formerly a variation from the true measure, reaching often as high as from 30 to 40 per cent., occurred. The Act referred to limits the range of error in gas meters to 2 per cent. as against the consumer, and 3 per cent. as against the gas manufacturer. In providing an instrument by which the intentions of the Legislature, so far as the testing of meters is concerned, can be carried out, Mr. Glover has conferred a valuable boon alike on gas companies and on the community. In the "Gas Consumers' Manual," which has just appeared, the national standard gas measures are characterised by the Astronomer Royal as capable of being applied to the verification of gas meters of every class, and as accurate as it is possible for human skill to make them. They have now been in use at the "Exchequer" above a year, and found perfectly adapted to their purpose. Messrs. G. Glover and Co. also exhibit a meter adapted for the photometer, remarkable for its simplicity and accuracy. By this meter quantities of gas so minute as from $\frac{1}{100}$ to $\frac{1}{2000}$ part of a cubic foot can be measured each second with precision.

The national standard gas measurer consists of an oval formed brass bottle, capable of holding exactly five cubic feet of gas; when full, the gas is emitted into the meter to be tested by displacing the gas in the bottle with water. The arrangements skilfully devised for performing this simple operation by Mr. G. Glover, are one of the objects well worthy of careful inspection at the Exhibition. Another interesting stall, Mr. Richards', Class XXXI., No. 6,342, contains the first gas dry meter, as manufactured by the Dry Meter Company, in 1835-6. The cylinder or case of this meter is divided by a loose piece of leather, acting as a diaphragm, its

use being to separate the measured from the unmeasured gas. The measured gas is expelled from one side of the leather by the entrance of the unmeasured gas, which distends the leather from the opposite side. When the leather is distended to its limits, the valve changes, indicating at the same time. The reverse action then occurs, and the gas in the filled compartment is expelled by the gas entering the empty one. This is the principle of all dry meters. The dry meter company ceased to exist after losing nearly £100,000. The first successful dry meter is that patented by M. Defries and N. F. Taylor in 1843. Mr. Richards also exhibits his own gas dry meter, and one invented by him in 1844. The description of meter here shown is that made by many of the dry meter manufacturers in the United Kingdom, the production annually being nearly 80,000.

(To be continued in our next.)

LABOURERS' COTTAGES, AND THEIR BEARING UPON ARCHITECTURE.

ON Tuesday evening a lecture was delivered in the theatre of South Kensington Museum, before the members and friends of the Architectural Museum, by the Rev. THOMAS JAMES, M.A., "ON LABOURERS' COTTAGES AND THEIR BEARING UPON ARCHITECTURE." The chair was occupied by the President of the Architectural Museum, Mr. A. J. B. BERESFORD-HOPE, who briefly introduced the lecturer.

The Rev. LECTURER said:—The lodging of our working classes in London and in the great cities is indeed a pressing question, but it is one still more removed from the sphere of art into that of social science, than the one which I have adopted; and so long as our wealthy Londoners care to remain contented with such high art as the 3-windowed houses of Harley Street and its compeers afford, it would indeed be preposterous to think of applying any sense of the term architecture, to the buildings destined for workmen and artisans. It is some hope, perhaps, for the miserably degraded condition of the domestic street architecture of London, that the best recent examples of urban building have been in city warehouses and St. Giles' Schools. Beginning at this end, it may surely in time force its way upwards, and shame our middle and higher classes, with their two or ten thousand a year, from burying themselves in the dingy walls of pointed brick, broken only by those statutable openings for limited light—which can only be explained to the intelligent foreigners, now so thickly congregating among us, as the nation's grateful memorial and perpetual tribute to the memory of the deceased Window Tax.

But while the difficulty of attaining good street architecture seems, judging from its rarity, almost insuperable, everybody supposes that he could build a Cottage. Just as everyone thinks he can write for the poor, so everyone thinks he can build for the poor; so little is required—so few the wants. You have only to take pen or pencil in hand, and the thing is done! But, indeed, the poor man's authors, after his Bible, are but three or four, and they of the very best; and of the thousand cottage plans that have been designed for the country labourer, there are scarcely more than three or four which he really likes, or would care to live in. It is notorious that the old mud hovels of the waste, the concretion of many generations, have far more comforts and charms, for the peasant, than most of the new spick and span new model cottages, premiated at the last agricultural show.

It would be a waste of time, yet almost amusing, to run over the marvellous mistakes which have been made in prize cottages, even by our leading societies. Some of the very worst models which I know have been ushered into the world as model designs. Some without any pantry—one with an ornamental verandah over the scullery—another with separate chimney shaft to nearly every grate—another with classical pediment to the gable, and Gothic moulded battlements to the pigsty. I pass over the outrageous bargeboards and extravagant hipknobs and other absurdities, added with the idea of giving an architectural character, and some quite impracticable; and I must own myself to a share in one which appeared in a leading review, in which the only way upstairs was apparently through the window.

Till within the last twenty years very little thought was given to cottage-building. Even improving landlords had little notion except of making them picturesque. The Lady Bountifuls, fresh from the side scenes of a London opera, tacked on, by the aid of the village carpenter, barge boards and rough bark, put sham latches on the front doors, which were nailed up to make all look neat and tidy, and then believed that they had effected a Swiss cottage, and a creditable improvement. But this was all in reference to themselves, and not to the occupiers, who were often put to great inconvenience for the sake of this outside show. Even when the best motives actuated the proprietors, there was a lamentable want of proper adaptation to the end proposed; and I scarcely know an instance where extensive cottage-building was effected, five-and-twenty years ago, where there are not evidences, in pseudo-Gothic, and classic accessories, of an unreality about the work, and, at best, but a feeling after an object which was not attained. The late Duke of Bedford was one of the first who systematically set to work in a practical spirit to solve the problem how a substantial and convenient house could be erected for the labourer, at a cost which would pay a reasonable interest on the outlay. He took the broad and liberal view which became a man who recognised the principle, that property has its duties as well as its rights. "Cottage-building," he says, "is, we all know, a bad investment of money, but this is not the light in which such a subject should be viewed by landlords, from whom it is surely not too much

to expect, that while they are building and improving farmhouses, home-steads, and cattle-sheds, they will also build and improve the dwellings of their labourers, in sufficient number to meet the improved and improving condition of the land."

His example was very widely and quickly followed; and indeed there were many other landlords, of greater or less acreage, doing the same good work independently, at the same time; but the Duke of Bedford will always stand out conspicuous in the movement, from the personal attention he himself bestowed upon the details of the plans, and from the book of designs that he published.

These are still among the very best before the public, and greatly to be preferred to the majority of those put out by professional architects. They range from a single cottage to groups of five or more; meeting almost every conceivable requirement of numbers and condition of families. They are thoroughly unpretentious in character, and they are cheap. The great agricultural societies, especially the Royal Agricultural Society, and the Yorkshire Agricultural Society, took up the subject of cottages about the same time, offered prizes for the best designs, and published the results. But by far the greatest share in promoting the cause of Cottage Improvement, and providing a large variety of commodious and inexpensive plans, must be assigned to the "Society for Improving the Condition of the Labouring Classes" (which has its office at Exeter Hall, and its publication, "The Labourer's Friend"), and more especially to the late honorary architect of that Society, Mr. Roberts, who, at home and abroad, in town and country, has done more than any individual, and I may say, any body of men, to disseminate reliable statistics and information about the dwellings of the labouring classes, and to carry out practical measures for their improvement. His pamphlets and lectures are generally too well known to require me to specify more than one, the last, just published by Ridgway, and entitled "Essentials of a Healthy Dwelling." I might have been charged with direct plagiarism, if I had seen his pamphlet more than a week ago, for it contains a design almost identical in general ground-plan with the one which I exhibit; but my own has been in the course of modification for the last two years, though no doubt indebted to some of Mr. Roberts' earlier plans for many features of its arrangement.

The one before you was, however, more directly modified from a ground-plan given in Mr. Strickland's most valuable pamphlet on "Cottage Architecture," being an examination of the best designs sent in to the Yorkshire Agricultural Society in 1859.

I could not have greater confirmations of the excellence of this plan than the facts, that almost the identical arrangement has been sanctioned by Mr. Roberts, in his latest publication, as the best which his matured experience can recommend; that so practical a man as Mr. Strickland adopts the same; and that the latest prizes awarded by the Leeds and Royal Agricultural Society embody its main features.

Such a concurrence of authority almost settles the question as to the best general arrangement for a double cottage; and is the more remarkable from the great divergence of the earlier prize designs, one from another, and all from this. I wish most explicitly to disclaim for myself any claim of originality in this plan. I put forward a much stronger claim on public gratitude if, after having carefully examined many hundred plans (as I have done), I have selected that which has the concurrent approbation of the best authorities on the subject, and will bear the criticism of the present meeting.

It is from the sources I have indicated, that I have drawn out (by the assistance, originally, of my friend Mr. Slater, and now by the aid of my friend Mr. Pedley, who has kindly made the elevations for me—and these are entirely my own) what I will not call a "Model Cottage" (for I should be very sorry to see any one type repeated and repeated over the whole country), but yet one which combines all the requirements that I have found to be demanded by those who have studied the subject, and from the experience which I have gained by enquiries among the agricultural labourers of my own parish. I think it better to exhibit only this one design than to complicate the matter by a variety of plans of elevations, with which I should have to find more or less fault. Of course this which I exhibit is open to criticism; and I hope that it may call forth discussion from those who have given attention to the subject of cottage-building. This design, then, professes to be for a pair of cottages for agricultural labourers. It is not suited to be built singly, or in a row of three or more. But a pair of cottages is the most frequent requirement for the country; because the single cottage would of course be comparatively dearer; and, from having all its sides outer walls, would, with the same thickness of brick, be much colder; while a row of cottages, besides being by association less country-looking, is also far less convenient for having a garden allotment attached, of sufficient size to enable the tenant to pay a remunerative rent.

It is in that way that I could meet the difficulty of the landlord's gaining a fair return for his capital. For the mere house, it cannot be done from the ordinary pay of a field labourer. Eighteenpence a week is as much as a man can well pay for rent, out of 12s. or 14s. a week wages; but £4 per annum is poor interest for £120 or £150 laid out by the landlord on a cottage which he has to sustain in repair; but add a quarter or half an acre, at ordinary farm rent, and the extra £1 or £2 which the cottager has to pay is more than compensated to him by the market-garden value which the land at once gains in his hands. Thus, by converting the grass or arable ground into garden, and affixing it to the cottage, the extra rent which the landlord may at once put upon the whole makes up to him for the insufficient return of the house singly. I need hardly observe how doubly valuable to the cottager is the land attached to his dwelling, compared

with the field allotment, which, as all who know country customs are aware, is almost always staked out in the most distant and inconvenient corner of the parish.

I enter into this part of the subject, because it meets the financial point of the question—in this as in every other matter—the one on which all eventually turns. If it were not that cottages are required to be built cheap, we need not consider the matter at all. Or let me not say "cheap." Let us only make a cottage *remunerative*; and we have not to consider whether it is cheap, but whether it is good. The plan I have indicated will unfortunately only meet the cases where land is at its natural value as land, and is at the disposal of the builder—but this is the case in nine-tenths of our rural parishes, and it is with these that I profess to have most to do.

(To be continued.)

WEST BROMWICH SCHOOLS.

OUR principal illustration this week represents some projected Church schools at West Bromwich. Messrs. Green and De Ville, of 36 Ormond Street, architects, say:—We propose to construct the walls of the building of the new red sandstone, with occasional bands and arches of coloured bricks or stone, and the dressings of oolite, the roofs being covered with slates of various colours. The schools are planned according to the requirements of the Committee of Council on Education, and are designed to accommodate 450 children. On the ground floor is placed the infants' school, with a south-west aspect, accommodating 150 infants, and the girls' school, with a south-east aspect, accommodating 150 girls, over which is a schoolroom for 150 boys, reached by a stone staircase in one angle, surmounted by a bell-turret. The infants' and girls' schools are divided by a double curtain, which allows of the two being thrown into one large room for assembling all the children at one time. All three schools would have a separate playground, and adjoining the building is a master's residence with a garden attached. The schools are provided with class rooms, and fitted up, warmed, and ventilated in the usual manner. The estimated cost of the buildings is about £2,000.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting of this body was held at the rooms, 9 Conduit Street, on Monday evening; Mr. ARTHUR ASHPIEL, V.P., in the chair. Mr. John Henry Parker was introduced as a newly-elected honorary member of the Institute.

The CHAIRMAN announced that the annual *conversazione* of the members of the Institute was to be held on the 25th of June, and that notices of contributions of works of art for use on the occasion should at once be sent in to the honorary secretaries.

Mr. JOHN W. PAPWORTH then read a paper, ON AN *ÆSTHETIC PRINCIPLE IN DECORATION*. The paper, which is not to be published at present, was illustrated by a number of drawings. The lecturer endeavoured to establish the following points:—first, they had no safe guide in decoration except that which arises from a careful study of executed examples, judged upon principles that were easily found; that those principles were opposed to the enrichment of sculptured ornaments by colour under any other pretence than that of gilding (and he contended that he had on a previous occasion established the fact that gilding was a barbarism in statues and in ornament); that gilding in all its branches was not a falsehood, and that in most of the cases in which certain persons had raised the cry, "A sham, a sham!" the sham had really been their apparently virtuous indignation.

Mr. WILLIAM WHITE proposed a vote of thanks to the author of the lecture. The lecturer asked them whether they would construct their decoration, or decorate their construction, as though the alternative lay between these two matters; but there might be a thousand other compositions equally to be taken into account. Again, he thought there was one point in respect to that from which the lecturer had rather held himself aloof, and that was the need of positive colour as attested by the universal taste of mankind. People would have colour in all their rooms, and in all other places where they were to be for any length of time. In many mediæval works there was a very common decoration, which consisted of stencilling out in stone without any under lime-wash. There could be no doubt whatever as to the accuracy of the principle laid down by the lecturer in reference to the truth of construction. But that did not argue against the truth in construction, and he hoped that Mr. Papworth would have shown them some principle as to what was truth in construction, because there were many truths which were not paraded, and might be worse for being paraded. In nature the most beautiful things were those that had no utilitarian advantage in the way other constructive art had. Look at the petals of flowers, and the delicate texture of the flowers themselves; they had no positive utilitarian use, and yet they were some of the most beautiful things in nature.

Mr. J. H. PARKER, having been called upon by the Chairman, said his study had been confined chiefly to the history of architecture, without extending to its æsthetics, or principles. He had always thought that colour was meant to bring out the forms.—Mr. W. BURGESS said, colour was a gift of the good God, and if a man had not that gift, all the world could not make him a good colourist.

Mr. MORRIS said, he thought they should look at architecture in its grandest light and aspect, and then they would find that decoration and

bits of fancy colour were all very subordinate indeed. If they looked at the works of the ancients, they would find that all the durable decorations were in relief, and it appeared to him that architecture should be kept up and looked to in that way as a decorative art, without depending upon painting or sculpture. And he thought the more this independent character was kept in view, the grander and more important would architecture be as an art.—Professor KERR said, they should both decorate their construction and construct their decoration, but they were in the infancy of the study of the real principles of decoration. He disputed the doctrine of Mr. Burgess, about colour being a particular gift. He did not think every man wanted colour, and he did not like Gothic colouring. When they copied nature they did wrong, but so long as they followed nature to the idea of conventionalism, then they did as much as they could in the present infancy of decorative science.—Mr. C. F. HAYWARD said, there were very large portions of educated people, who desired to have good and proper coloured decoration, and that the uneducated mind desired colour was quite clear to everybody.—Mr. MAYHEW thought all liked colour more or less, especially the ladies. He would not like to sit long in a room where there was not colouring, but the chief thing to be avoided was false colouring.

The CHAIRMAN was of opinion, that if proper attention were paid to the matter, it would be found that there was not so much difference between the Gothic and the Classic as to decoration. As to nature, they could not follow nature in an arch or roof, but what they should bear in mind was accuracy and propriety. There was very little genuine authority to show that the Greeks used polychromy outside, although they did so inside the building. We should not ourselves polychromise the outsides of our houses, and he believed with Mr. Parker, that the great use of colour was to enrich and to enhance the beauty of a building.

The following gentlemen were, on ballot, admitted members of the Institute:—Mr. John Samuel Phené, of 34 Oakley Street, Chelsea; Mr. Gore Ouseley Lane, of 4 Dawson Place, Bayswater.

CHURCH, CHAPEL, SCHOOL, AND OTHER BUILDINGS.

WALSOKEN.—On Thursday afternoon, at New Walsoken, the first stone of the new Chapel-of-ease, was laid by Mr. R. Young. The architect is Mr. W. Adams, and the builder Mr. J. H. Andrews. A brass plate was enclosed in a cavity in the stone, recording the particulars of the event.

EATON CHURCH, NEAR CONGLETON, CHESHIRE.—A beautiful western window was placed in this church last week, on the anniversary of the death of the lamented Mr. G. C. Antrobus. The window, which is a memorial one, is the united offering of the tenantry and inhabitants of Eaton, headed by the incumbent, the Rev. J. P. Firmin. It is from the studio of Messrs. Edmonson and Son, of Manchester, and represents the parable of the good Samaritan, with the suggestive words underwritten, "Go thou and do likewise." Beneath the subject is the inscription, "In memoriam Gibbs Crawford Antrobus. Obiit 21st May, 1861." In the upper tracery of the window are foliage and other ornaments, surmounted by the shield of the deceased. The colouring of the window is clear, but well tempered and toned into harmonious general effect; and though the whole appearance of it is highly pleasing, it very properly does not vie in brilliancy with the beautiful chancel window by the same artist, erected four years ago by the masonic body in the neighbourhood as a mark of respect to the late Mr. Antrobus. We understand that in addition to the window it is intended by the parishioners to place a monumental cross in the body of the church.

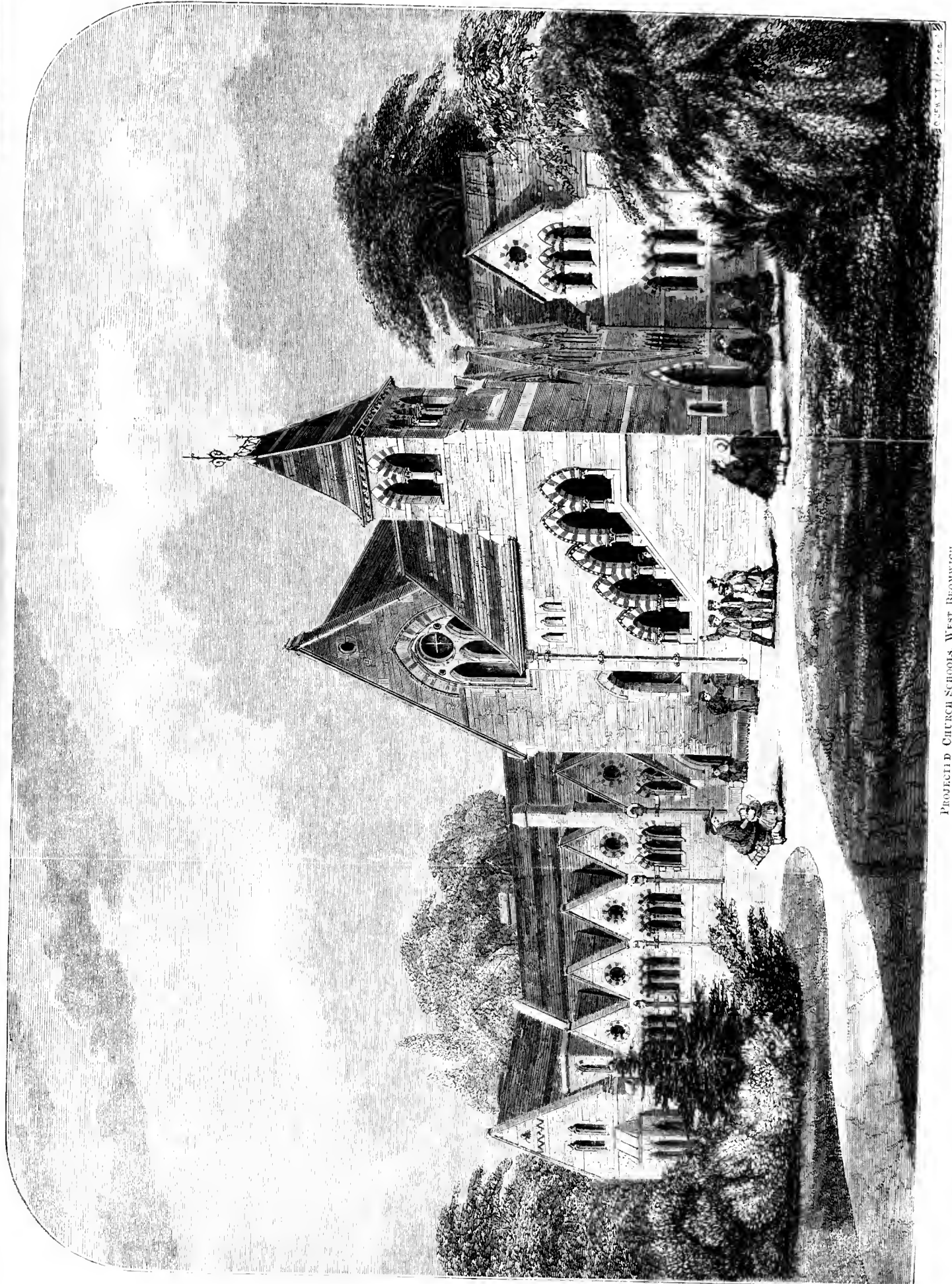
ST. GILES, EXHALL.—The old parish church of St. Giles, Exhall (anciently Eccleshall), near Alcester, Worcestershire, has been restored at a cost of about £900. The works have been completed very satisfactorily. The Rev. H. C. Carleton, rector of Arrow and Exhall, has subscribed handsomely to the restoration fund. Mr. Solomon Hunt, of Harvington, was both architect and builder.

HIGHWORTH, NEAR WINCHESTER.—The restoration of the fine old church at Highworth, near Winchester, is nearly completed, and reflects credit on the architect, Mr. Hugall, and the builder, Mr. Pedley. The opening takes place to-day (Friday).

ST. PETER'S, MARLBOROUGH.—A vestry meeting was held last week to consider the plans and specifications furnished by Mr. Wyatt, the diocesan architect, for repairing, amending, and re-pewing the church. The rector occupied the chair. The churchwardens, Dr. Fergus, W. C. Merriman, Esq., John Halcomb, Esq., and a large number of ratepayers attended. The plans, &c., were produced by the rector, and the proposed alterations having been explained and discussed, the meeting was adjourned for the purpose of obtaining further information from Mr. Wyatt. A working committee, consisting of the rector and churchwardens, and a committee of reference were appointed.

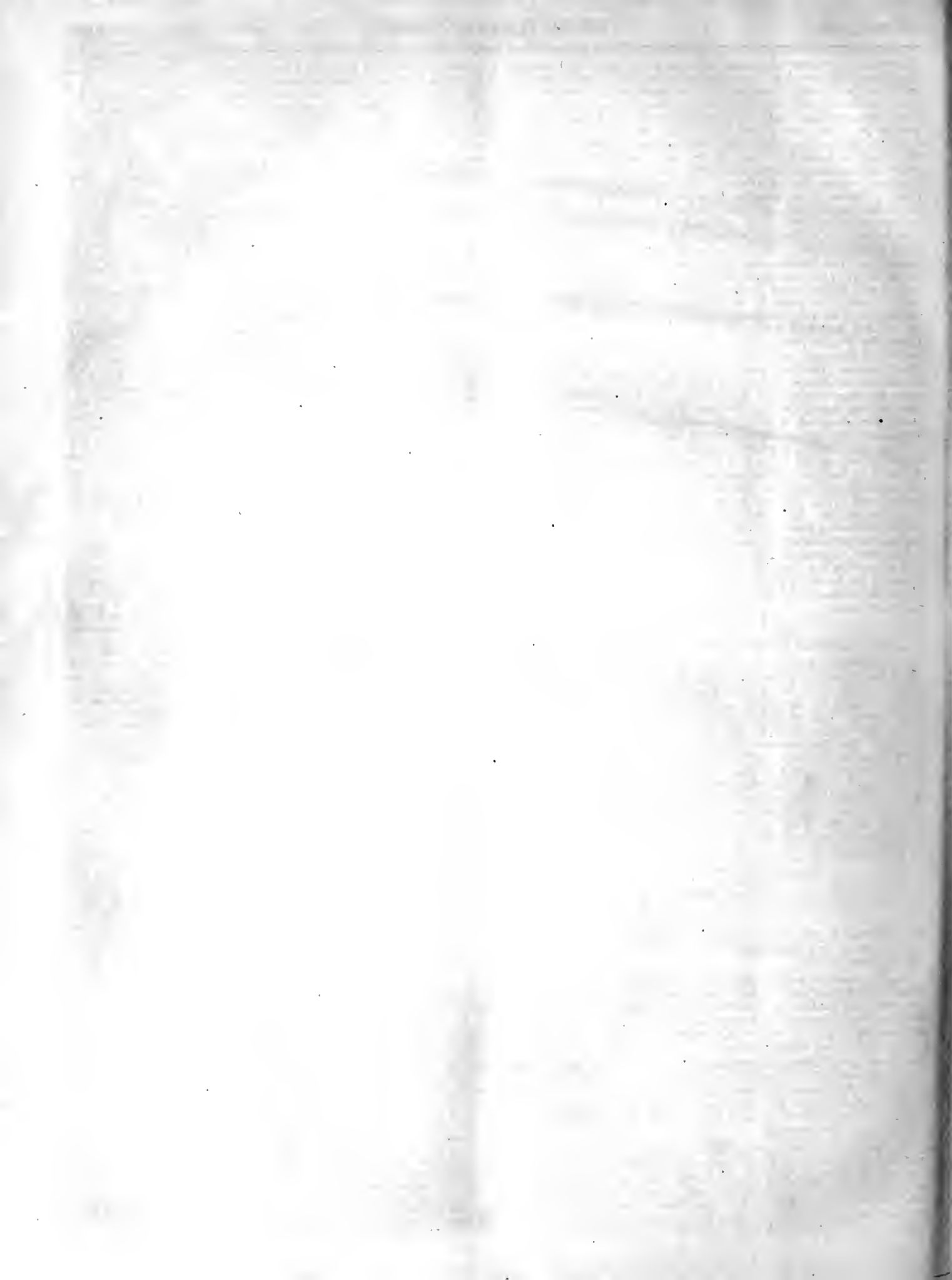
NEW CHURCH AT WARTER, NEAR POCKLINGTON, YORKSHIRE.—The corner-stone of the new church at Warter, was laid a few days ago. For the removal of the old church (which for years had been in a dilapidated condition), and the building of a new one, the parishioners are indebted to the liberality of the principal landowner in the parish (Lord Muncaster, of Warter Priory). The stone was laid on the south-west angle buttress of the church, which will be built in the Gothic style, and consist of a nave and chancel 89 ft. long by 33 ft. 6 in. wide, with a tower and spire 120 ft. high. The architects are Mr. William G. Habershon and Mr. Alfred Pite, of London; the builder, Mr. Ralph Weatherley, of York.

HOLY ISLAND PARISH CHURCH, DURHAM.—As the restoration of this



PROJECTED CHURCH SCHOOLS, WEST BROMWICH.

C. NEWELL, L. P. 1864.



church proceeds, matters of interest and beauty are constantly discovered. The arches of the nave have been cleared of centuries of whitewash, and exhibit an architectural construction of rare excellence and beauty. The pillars on the north side are circular, on the south octagon. Some of the arches are constructed with alternate white and red stones, while the masonry is of the most perfect kind. The arches on the north and south are different in architecture, construction, and size. Altogether this church will exhibit some of the most extraordinary freaks of ancient architecture yet discovered in the kingdom.

HOLME CHURCH, NEAR STAMFORD, LINCOLNSHIRE.—The church at the village of Holme, having been found too small for the requirements of the parish, has recently been considerably enlarged. The edifice comprises a nave and aisles supported by Norman arches, and has a light and elegant appearance. The benches are entirely of oak, the ends nicely carved, the whole facing the pulpit. The floor is tessellated with red and dark-coloured glazed tiles. Iron gratings run up the aisles, under which are pipes conveying hot water for warming the building. The roof is ribbed and vaulted, and, as well as the lectern and reading desk, is of red pine stained to resemble oak. The pulpit is of marbled alabaster with carved bosses running round the base, emblematical of the four evangelists, and mounted on a pillar of Helpstone stone. The entire cost of the building is about £2,000, the greater portion of which has been met by Wm. Wells, Esq., the lord of the manor, and the rest by a rate of 1s. in the pound, extending over two years. The church, which is calculated to hold about 350 people, was erected by Messrs. Perkins, of Easton, and Bradshaw, of Stamford, under the superintendence of Mr. Browning, architect, of Stamford. The iron building formerly used at Millfield, Peterboro', for a Sunday school, having been purchased of Mr. Stanley's executors, was appropriated to the purpose of public worship during the progress of the erection.

WAKEFIELD CHURCH INSTITUTION.—On Tuesday evening, the building erected for the purposes of the Wakefield Church Institution at the top of Westgate, in that town, was inaugurated. The building may be called geometric Gothic, and has been erected from the designs of Mr. Higham, of Newcastle-on-Tyne. The cost of the building, apart from the site, has been about £2,000. The lecture hall is acoustically well constructed, and there are a reading room and library on the ground floor, as well as several large and well ventilated class rooms on the basement story.

ST. JOHN'S, DURHAM DOWN, BRISTOL.—A writer to the *Bristol Daily Post* says:—"It is stated that funds are being raised for the erection of transepts, and for effecting other alterations and improvements, with a view to meet the necessity for additional church accommodation in this rapidly increasing parish."

CLASS OF DESIGN OF THE ARCHITECTURAL ASSOCIATION.

A MEETING of this Class took place on Friday last, when there was a large attendance of members. The President of the Class, Mr. T. R. SMITH, occupied the chair. The subject for the evening was "A Parsonage House," designs for which were contributed by Messrs. Beesley, Davies Hack, Julian, Molecey, Paris, Payne, Ridge, Sills, Spiers, Tarver, and Walter, and which were freely criticised by the chairman and members of the Class. The designs were accompanied, in the majority of cases, by plans of the several floors, and several of the drawings had been carefully studied, and were very meritorious. After the examination of the sketches, the Class proceeded to elect officers for the ensuing session. Mr. T. Roger Smith was unanimously re-elected President, and Mr. R. O. Harris, Vice-President. Mr. E. J. Tarver was re-elected honorary secretary, in conjunction with Mr. L. W. Ridge, and a vote of thanks was passed to Mr. Walter, the retiring secretary. The meeting then adjourned to Friday, the 13th of June.

Reviews.

Second Annual Report of the Society for the Acclimatisation of Animals, Birds, Insects, and Vegetables within the United Kingdom. 1862. Offices, Duke Street, Adelphi.

From the report before us it appears that the anticipations of the success of the Society have been so far realised, and that, considering the short time that it has existed, and the difficulties that usually beset an attempt to introduce novel ideas and novel experiments, the condition of the society is highly satisfactory. The number of members and subscribers has increased largely since the last annual meeting.

The Assurance of Diseased and Doubtful Lives on a New Principle, more Advantageous and Equitable to Policy-holders than the System hitherto adopted. By MONNIE A. BLACK, Actuary to the London and Yorkshire Assurance Company. *With Observations on the Characteristics of Assurable and Non-Assurable Lives.* By A. P. STEWART, M.D., F.R.C.P., Physician to the Company.

Life Assurance, a matter often sadly neglected even by those who are most eligible both as to health and means, is the subject of this pamphlet. The writer's object is to indicate the general principle on which lives are selected for assurance, the system on which "diseased and doubtful" lives have hitherto been assured, and to develop a new principle with relation to the latter class of lives more equitable than that hitherto adopted. The system hitherto observed, it may be stated in brief, in the case of all

assured diseased lives, is to add a certain number of years to the natural age of the candidate for assurance—five, ten, or fifteen, as the case may be; thus making a candidate, as an assurance subject, so many years older than he really is. Mr. Black entirely discards this method. He argues that the estimate of the value of a life is often false, still oftener mistaken, and generally unreliable, as positive data. He proposes, therefore, in all cases, to give the assurer the benefit of the doubt. Instead of adding to his nominal age, and by so much increasing the premium, Mr. Black's plan is to accept candidates at their real age, that is to say, at the ordinary premium, and charge the estimated depreciated value of the life on the policy, to be deducted in case it becomes a "claim" within a specified number of years; and if the life survives the specified number of years, no deduction from the sum assured is made. This plan, it must be confessed, is both easy and equitable. It gives the candidate whose life is assumed to be diseased the chance of assuring on the ordinary terms, and the further chance—if his life should prove a good one—of escaping altogether any additional charge.

The Church's Floral Calendar. London: DAY and SOX, Lithographers to the Queen.

This is one of the most beautifully executed works we have ever seen. It is compiled by Emily Cuyler, with a preface by her brother the Rev. F. Shelley Cuyler. The illustrations are designed and chromo-lithographed by W. R. Tynms. The object of the book is to associate flowers with principles. The theological spirit of the book may be seen indicated in the following sentences, which constitute the concluding paragraph of Mr. Cuyler's preface. "It must, however, be borne in mind, that with some holy days, more than one flower is connected with tradition; as, for instance, in the case of the Annunciation, to which appertains the flowering almond, the white lily of the Annunciation, and the cardamine flower. In such cases the compiler has confined her choice to the one which seems best adapted to the festival, or the most sanctioned by use."

THE REV. GEORGE WILLIAMS, B.D., ON ECCLESIASTICAL ARCHITECTURE IN GEORGIA AND ARMENIA.

(Concluded from our last.)

THE CONVENT AND CHURCHES OF SAFFARA.

WARDSIA.—Still ascending the Kur, which here runs through a rocky gorge, dominated by the picturesque castle of Tionmoule or Inogvi, situated on an almost inaccessible hill on the left bank of the river, we reach the rock-hewn convent of Wardsia by a road scarcely practicable. This convent is entirely excavated in a precipitous rock, which rises from a narrow plain on the left bank of the Kur, and consists of nearly 400 chambers of various dimensions, among which are found one large cathedral church and six or seven small chapels. The whole place has been given over to centuries of desolation or desecration, during the occupation of this part of the country by the Turks; but quite recently, a vigorous lay-brother, a Greek from Trebizond, has been earnestly employed in clearing it of its pollutions. The cathedral has been restored, so to speak, and furnished with a new iconostasis; and the Divine offices, with the Liturgy of S. Chrysostom, are again celebrated there by a Greek priest, also from Trebizond, in the presence of a few of the orthodox villagers from the neighbouring village of Tsounda. I can only briefly notice the cathedral, which is situated about the middle of the convent. It has a kind of porch, opening into it from the south, supported by two pillars left in the live rock, and is lighted by apertures pierced in the same. It measures about 45 ft. by 25 ft., and is about 40 ft. high; the rock at the east end is formed into an apse. On the north is a kind of aisle of irregular shape, in which is the mausoleum of the renowned Queen Tamar, who passed much of her time at this place, and whose spacious apartments, with their wide divans, all excavated in the natural rock, once communicated with the church by a passage and stairs, still to be traced. This queen, who died in A.D. 1212, was daughter of George, who reigned from 1156 to 1184, and is said to have commenced this monastery, which was finished by his more renowned daughter. Of the chapels I can only mention one, which is entirely covered with frescoes, evidently executed by a Greek artist, probably a monk of Mount Athos, for not only are all the subjects treated, and all the figures represented in the conventional style of the Greeks, but the names and legends attached to each are certainly in the ancient Greek characters, though Brunet has pronounced them to be Georgian. The only piece of masonry in this extensive convent is found in the entrance gateway, which may also have served for a belfry; but the upper story is now destroyed. This building which is comparatively modern, may date from the restoration of the monastery, after its violation by (Tamerlane) Thab-Thamraz, about the middle of the eighteenth century.

Mtzhetha.—I have yet to describe the most venerable, and to me the most interesting of all the ecclesiastical monuments of Georgia, situated also on the Kur, but at a distance of little less than 200 miles from the convent last described. Only one post short of Tiflis, at the confluence of the River Aragva with the Kur, is found the site of Mtzhetha, once the civil and religious capital of the Georgian kingdom, the venerable cradle of the national church, and the seat of its Catholicos, until, within the last few years, the Russian bureaucratic rage for centralisation, most unhappily, as I think, transferred the metropolitan see to Tiflis, and merged this ancient independent branch of the orthodox Church in the holy governing Synod of St. Petersburg.

Meanwhile, the material landmarks of this much enduring church still remain, mutilated and debased no doubt, and grievously shorn of their ancient dignity, but only the more dear on that very account to those who cherish a feeling of veneration and love for what presents the noblest example which ecclesiastical history has preserved of allegiance to the faith of Christ, under hardships and privations and persecutions which have no parallel in any other church in Christendom.

I have two churches to describe, the "Ouspenshi Sabor," or church of the Assumption, and the Cathedral of the Twelve Apostles. The Ouspenshi Sabor, is the conventual chapel of a small nunnery, which doubtless occupies the site of a more numerous and influential religious house attached to this abbey

church, in the palmy days of Georgian Christianity. It stands in a court of some considerable size, surrounded by a high wall, within which, on the south and south-west of the enclosure, stand the houses of the nuns and the hospitium and guests' house, which are modern constructions, and demand no notice.

The north-east angle of the close is occupied by a very small chapel dedicated to the memory of S. Ninia, the apostle of the Georgian nation, who, a humble slave girl herself, emancipated the king and people of the land of her captivity with "the glorious liberty of the children of God." At the north-west angle is a square tower, with a polygonal lantern, with a conical roof, which may formerly have served for a bell-tower, similar to that over the chapel of S. John Baptist, at Saffara.

But I must proceed now to notice the church itself, which is of the same type precisely as that of Timotheisméne, and as the principal church of the Convent of Saffara. I shall, therefore, notice only those features which are peculiar to this church. Externally I have to notice a double base-table, the lower 4½, the upper 9 in. deep; each 9 in. wide, serving as a continuous pedestal for the pilasters, which support an arcading that runs round all that part of the original wall of the church which is still exposed to view; for additions, of which I have to speak presently, have been made to the church, both on the north and south sides. This arcading is common to this church and the cathedral, and I see, from drawings, that it was applied also to other churches in Georgia. It is admirably executed, and indeed the whole construction of these walls is a masterpiece of masonic art. The east wall is arcaded in five, giving one arch to each aisle, and three to the chancel, which rise much higher than the side arches. There is a curious angular recess between the two shafts that support the side arches of the chancel, the only exterior indication of the apsidal termination within, for these recesses are formed in the thickness of the wall formed by the apse. But the most remarkable feature in this church is the chapel abutting upon its south wall, and forming, in one of its bays, the porch of access to the church itself. This chapel is covered with a gabled roof at right angles to the roof of the church, and tiled, while all the other roofs are of the same solid ribbed stone as we have noticed elsewhere. There was formerly a brick porch at the west end, which is now in ruins, and a lean-to cellar-like building covers the northern wall for a length of 65½ ft. from the west end, being only 14 ft. wide. The church measures externally 90 ft. by 56 ft., not including the chapels. I must not quit the exterior without mentioning the very rich arabesque ornaments which cover the gables of the transepts, which are arcaded in three; the wall border, the middle arch being pierced with two lights, while the side arches, which are much narrower and lower than the centre, serve as frames for double blind lights, which seem never to have been pierced.

Entering into the interior through the second bay (from the west) of the south chapel, the arch of which is nearly double the width of the others for the purpose of forming a porch, we find this chapel highly ornamented with good stone carving of the Byzantine character. It is divided internally into four bays; whereof the easternmost has an apsidal termination, the next bay to this has a flat dome vault resting on pendentives, exquisitely sculptured, and its walls are richly arcaded and recessed. The interior of the church itself corresponds in all its main features with Timotheisméne and S. Saba, already described, but a low stone screen of Byzantine character, with the arches entirely open, in place of the usual iconostasis of closed panels, is a peculiar feature of this church. The synthronus here is more developed than in the church of S. Saba. There is in the centre of the apse a large throne, to which is an ascent by four wide steps, which run entirely round the apse, and seem to have formed a double row of benches for the chapter of the convent. Besides the episcopal throne in the apse, there is an ancient canopied throne, richly carved in stone, raised two or three steps, attached to the eastern face of the pier which supports the lantern on the south side of the nave; and in the corresponding position on the north side is a very massive chair in black marble, without any carving. The former of these was said to be the throne of the Metropolitan, the latter of the hegumen.

This church was undergoing very extensive repairs when I was there, and was entirely denuded of furniture, which considerably facilitated my survey. The nuns were meanwhile assisting in the offices at the cathedral, which I have next to describe. I shall be as brief as possible.

The Cathedral of the Twelve Apostles is a building of the greatest interest to the sacred archaeologist and ecclesiologist, as being that which undoubtedly occupies the site of the first church of Georgia, erected during the reign of Constantine the Great; while the existing building, though often ruined by accident or violence, and as often restored, yet unquestionably exhibits in its main features the identical church in which many generations of the orthodox kings of Iberia received their coronation unction, and in which the mortal remains of the royal family have been interred for centuries. But we are at present engaged with the architecture, not with the history and antiquities, of Georgia. The church is situated within a kremlin—a name common in Russia to any fortified enclosure surrounding a church, such as that most celebrated one at Moscow: the Acropolis at Athens, or the Capitol of Rome, would have been kremlins to the Russians. The high wall of this enclosure is flanked with square and circular towers, which give it quite the character of a fortress; and the buildings occupied by the priests and servants of the church are situated on the west and south sides of the close; the palace of the Metropolitan I did not distinguish amid these half-ruined habitations.

The church itself has the same double base-table, and an arcade running round the walls, with niches in the east end, similar to the Church of the Assumption; but it has also some curious sculptured stones placed in the wall at random, as it would appear, by way of ornament—some carved in arabesque patterns, others rude representations of animals unknown to zoology—possibly recognised in Georgian heraldry. I found the church to be 160 ft. by 66½, interior measure. The height of the lantern, I read, is 112 ft.

It has these peculiarities. A narthex, covering the whole of its west front, besides the square porch which we have found in the other churches. This narthex has a roof of its own, lower than that of the church, so that the aisles of the nave have windows in their west walls, above the roof of the narthex. The church has also double transept aisles, which within appear like an extension of the nave eastward, and of the sacarium westward, one bay each; it is only the roofing that indicates that they really are what I have stated them to be. The iconostasis is advanced westward of the eastern aisle of the transept, and stands between the two eastern piers of the lantern. A modern and tawdry iconostasis has lately been substituted for the old one, the fragments of which

were resting against the south wall of the transept, and the grim-visaged figures of the old national saints in their picturesque costumes appeared to me much better to harmonise with the genius loci than these miserable specimens of modern art and debased taste. The lantern is a polygon of sixteen sides, and springs immediately from the pendentives, without the intervention of the circular drum which is found in the Church of the Assumption. Between the piers of the nave on the south side is a low square column, surrounded by a wood frame, canopied and covered with ancient paintings—an object of special veneration to the Georgian Christians, as being the place where a miraculous flow of ointment indicated the presence of the seamless coat of our Lord, the most precious relic of the Church and nation. Close by this, on the east, is the throne where the Georgian kings were crowned by many successions of Catholic, from the days of Miriam, their first Christian King, until the last of the royal line, George XIII., at the close of the last century. There is an ascent of two steps to the synthronus, which is divided into stalls, five on each side of the throne in the apse, with an extension eastward along the flat wall of the sacarium. Immediately behind the altar is a large and massive silver cross, used in processions, covered with Byzantine chasing, very rich and of great antiquity. The church also possesses a reliquary of ancient date, which the Catholics was wont to wear as a breastplate on great occasions, in imitation, it may be presumed, of the Urim and Thummim of the Jewish high-priest.

This allusion has carried me again to Jerusalem, and I must not leave this interesting church without directing your attention to a stone model of the Holy Sepulchre, which is erected against the south wall of the narthex—another memorial of the old communion between the Georgian Church and the Holy Land, to which I have already more than once referred, and to which I must further allude, in conclusion, in order to call to your notice the remarkable resemblance that is still found to exist between those churches which I have described, and two of the eleven churches which still exist at Jerusalem, which are historically known to have belonged originally to the Georgians. I allude to the Church of S. James, now held by the Clemenians, on Mount Sion, and the Convent Chapel of S. Salvador, occupied by the Franciscans since the sixteenth century. I am enabled, through the kindness of Signor Pierotti, to exhibit ground-plans of both these churches, and a section of one, a glance at which will at once show you how remarkably, in this instance also, architectural science confirms historical testimony.

I was to have said something on Armenian as well as on Georgian Ecclesiology, but have left myself less than no time to do so, having already exceeded the limits assigned me. I regret this the less, because, having been prevented by illness from exploring the Armenian churches of Tiflis, and from prosecuting my contemplated journey into Armenia Proper, I could only have reported upon them at second hand, from books, which probably are accessible to all, in the reading-room of the British Museum. I thought I should be doing better service if I confined myself to the results of my own actual surveys of buildings which have either never been described and illustrated at all before, or in so very slovenly and careless a manner as to mislead rather than to guide the student who would investigate this almost untrodden, but most interesting and instructive, field of ecclesiological research. I feel that I have done but scanty justice to my subject, but I trust I have furnished you with elements for the investigation of the curious question of the place which Georgia occupies in the development of religious architecture—a question which appears to me to offer some problems not very easy of solution, and which I gladly leave in abler hands.

ON THE LIFE OF WELBY PUGIN.*

THE remainder of the chapter of this great artist's manhood need not take much time to tell. In 1843 he published another book, entitled "An Apology for the Revival of Christian Architecture in England." The character of the book is the same as before: the same style of enthusiastic exaggeration, mars its merit. To such a degree does he in fact give way to the old spirit of "contrast," that in presenting, in comparison with a standard Mediæval gateway, the majestic Doric portico of the Euston Square Railway entrance, he draws it in a manner literally that of a common shop-card engraver.

The "Glossary of Ecclesiastical Ornament and Costume," which he published in 1846, elaborately illustrated in chromolithography, is considered to be a very able, and indeed learned compilation. It is in that light the only one of his works which is of permanent value as a book of reference. As regards our present view of the author's place in art, we need only remark, that the tendency of the "Glossary" was still toward the resuscitation of ritual symbolism, and still, in its application, confined to the Roman Catholic church: and that it was deemed at the time to be another successful effort towards the earnest purpose of his life,—in some respects the most successful of all, seeing that the nature of the work kept in check that tendency to exaggeration of argument which was the great fault of his heated enthusiasm. His immediate object was to promote the amendment of art in the vestments, vessels, and furniture of the Romish ritual; but it might safely be said that its ultimate effect was much greater in the Protestant church than in the Catholic.

We have not time to dwell upon a visit that he paid to Italy in 1847; but it may be remarked that his reflections were characteristic as ever. He came home much improved in his style of drawing, much incensed at Pagan churches in Rome, much pleased with Italian Gothic buildings; but not in any degree changed in his opinions or subdued in his enthusiasm. To the end of this chapter of his best days we have to place Pugin in the same relation to his heart and his faith with which he set forth upon his career; to assign him still the same transcendental enthusiasm, developed still with the same passionate argument, springing still from the same root of artistic religion, and tending to the same rich and refined exuberance of mystic ritual. Every successive year of life confirmed him in his convictions all the more. That his fanaticism was the fire of real genius his persistency proved; for he withstood all assaults successfully. He could even acknowledge that in his practical work he found it frequently beyond his skill to adhere to his theoretical principles; and he could do this without giving the advantage to his opponents. The fervid and natural eloquence of his writing proves that he was neither vain nor affected, as many men of genius are. In a word, his spirit was in the clouds: his most intimate associates had but little knowledge of his thoughts,—passionate, eccentric, fanatical thoughts that were above them.

* See p. 361, ante.

It forms a striking episode in his biography, but fortunately demands no particular notice in such an argument as ours, that in 1844 he became once more a widower, at the still early age of thirty-two; that the superior connection which he enjoyed in Romanist society prompted him to seek a fresh alliance, where on two occasions his eccentric character caused him to be disappointed; that his irritation on the failure of the second proposal led him to publish a most injudicious pamphlet on the subject, which, however, the advice of a more prudent friend led him to suppress; that he at length, in 1818, found another consort, now his widow; and that, amongst other oddities, he then issued a dainty Medieval wedding-card, which, by itself alone, simple as it is, must be pronounced a charming work of genius.

At St. Augustine's Grange, at Ramsgate, Pugin still dwelt in such manner as from his past habits we should expect.

From 1841 forward, for about ten years, his life was one that will long be a not unpleasant legend of the seaside town. He lived in a quaint Gothic asceticism, which one might not irreverently call the habits of a hermit with a large family and an extensive business. In early morning at prayers in his domestic chapel punctually as the bell tolled the Angelus; at prayers again at half-past seven, habited in cassock and surplice; at breakfast for seven minutes, and no more; at mass on feast days at eight; taking the simplest possible dinner of fifteen minutes, at one to a moment, still abjuring beer, and none the less more noble wine; at work, work, work, between these hasty meals and prayers all day and evening; at Commune at ten; for an hour afterwards at his books; then to bed till six again. Hating, as he alone could hate, with what his biographer calls "an intense and holy horror," all public charities, as unlicensed, uncanonical, unritual, unmythical "abominations" (to use a word of his own), he set up at this St. Augustine's an odd, independent, self-willed sort of charity, as essentially Gothic, artistic, ritualist, as all else about him. He kept a great stock of clothes, and gave them away to ragged men in suits; he would rush at any instant's notice to the rescue of the shipwrecked sailor, and out in his boat to help some shattered vessel in a gale upon the fatal Goodwins; he would carry on his shoulder, on a Sunday afternoon, such a thing as a load of bedding, and in his hand a bag of provisions, because some ragged shipmate had sprained his leg, and was laid flat on his back like old Bill Barley; he would provide for an entire shipload of poor foreign emigrants driven to port by stress of weather, so that one of them, their elected spokesman, being unable to make himself otherwise understood, could only place his neck under the benefactor's foot for gratitude; and all the while he stuck to Christian art and his boat; played quaint Gothic miracle plays at Christmas and Twelfth-night, and sailed out cheerily in sunshine or in breeze, to stretch his spirit in a long and bracing run upon the open sea.

IV.—THE END.

All through his life, let me repeat again, I have found myself compelled to regard Pugin as a mystical ritualist: his religion ritual, ritual his art; his religion and art therefore the same—a combination of the fanatical zeal of the one with the poetic passion of the other, which has probably never been otherwise met with, at least in the world of the present day, and in the atmosphere of England. It was on account of ritual alone, as I hold, that he chose in his early youth the Romish Church. Now what would be the effect upon his mind if in the course of time the English Church were to begin the earnest encouragement of ritual reform; to do so in obedience to his own teaching; to apply to the task all that wealth, social influence, public spirit, political respectability, which the great Established Church alone commands; to work in the cause with such a will that before he himself had attained the age of forty it had outstepped the Romish ritualism altogether, and left it lagging behind in apathy; and what would be the effect upon his mind if, at the same time, as the meditation of more experienced age and deeper learning became more assured and more profound, the feeling had been forced upon him that his idolised Romish Church was, in respect even of the ritualism for which he had embraced it in his youth, very much of a make-believe after all? And what would be the effect upon him if he had had controversies with infallible divines—paper wars, bitter personalities, in which he had been ridiculed by the priesthood itself as a fanatical materialist, whose notions were out of date in these days of plain faith and doctrine; when the gaudy bedizenment of cathedrals for the glory of God had given place to the building of numerous rather than costly houses of prayer for the accommodation of practical people?

Whether I am right or not in the suspicion which is implied in these questions; whether better informed persons—his connections at the time—were right or wrong in their declarations of his true and secret feelings; at all events, it seems to be acknowledged that, about the year 1850, there arose serious misunderstandings between Pugin and his ecclesiastical rulers. The proper submission of his fallible judgement to the infallible authority of the Church began to be considered questionable. Why are our priesthood, he may be imagined to have asked, so apathetic in respect of the venerable mysticism of their holy ritual? The priesthood, would be the answer, are the sole guardians of that matter. But they are dull and inanimate—dead and cold. In your fallible judgement they may be so; that does not affect the question. And, in fact, the rumour began to spread that Pugin had at length become troublesome with his crotchets, and must be kept in his place. In the Romish Church it is understood that a man is very peremptorily dropped out of confidence, favour, and patronage, when he becomes restive; and we will all agree that, if Welby Pugin began to suspect that he was being so treated, the effect upon himself would not be of a soothing, certainly not of an intimidating character. When he undertook to assist Sir Charles Barry in the finishings and furnishings of the Palace of Westminster, I know not whether his independent practice had begun to fall off or not; but it is understood that, for the last few years of his life, his Roman Catholic connection in business was not what it used to be, and that his reflections thereon were not of a conciliatory kind.

The year 1851 was very full of incident to Pugin. He took charge of the Medieval Court of the International Exhibition; and his design and arrangement of the objects were much admired. This, and his employment at second-hand upon the Houses of Parliament, may be called his first public engagements. Hitherto his bigoted faith, his secluded mode of life, and his bitter pugnacity, had made him a sort of public enemy; and the greater his ability the more dangerous his character: but time had cured this; still more than time, the change in public opinion upon his favourite subject had changed his estimation; and, consequently, the author of the "Contrasts," when he became the

commissioner of the Exhibition, and the honoured colleague of Barry, was a popular man. The Anglican church critics, who in bygone years had carped and cavilled at his failings all the while that they pored over his teaching, were becoming his open admirers. This may all have had its influence upon his mind. In a word, it is the opinion of many that, if not distinctly contemplating a return to the Protestant Church, he was at least wavering very much in the subordination of his fallible judgement. Upon the purely religious question, however, we may touch but very briefly.

At the very time when he was occupied with the Exhibition court, he brought out two literary works. One was a "Treatise on Chancel Screens and Rood Lofts." In this he openly attacked the Romanist priesthood for their shortcomings in the matter of ritual, and the consequence was much displeasure on their part. They threatened to put his book upon the "Index" of the Pope's excommunication. The second publication was a pamphlet, "An Earnest Address on the Establishment of the English Catholic Hierarchy." The object was to induce the Romish church to meet the famous appointment of prelates, with English titles, by a grand united effort to increase the power and pecuniary resources of the bishops, and of course to promote ritual dignity. An apparently innocent object; but the "Earnest Address" made matters worse than ever. It would seem as if in these two works the despairing enthusiast were giving the church of Rome a last chance for amendment. To quote his stormy paragraphs is what we cannot now do; suffice it to say, that all the vigour with which the "Contrasts" had battered the foe without, was now brought to bear against the foe within. The rapidity with which he delivered his blows was marvellous. It was still early in 1851, when he wrote thus to a friend:—"I am almost distracted; for, in addition to all other labours, I have a most important work on the real cause of the change of religion in the sixteenth century, which will place matters in a totally new light," and so on. This work he did not live to publish; or, rather, its publication was prevented by authority. The title was to be this,—*"An Apology for the Separated Church of England since the Reign of the Eighth Henry; written with every feeling of Christian Charity for her Children, and Honour of the glorious Men She continued to produce in evil Times."* By A. Welby Pugin, many years a Catholic-minded Son of the Anglican Church, and still an affectionate and loving Brother and Servant of the true Sons of England's Church." We can gather from the account given of this by Mr. Purcell, that he began at once with the old ritualistic principle,—the primitive rites, the style, plan, &c., of churches and altars; the form of vestments and ornaments; and that, after pursuing a long and searching argument in that laboured style of conciliation which is more offensive than open scorn, he concludes with invoking his readers "to speak and think with gratitude of the old bridge that has brought us over (the Church of England), and to lend a pious help to restore her time-worn piers." It is alleged by private evidence that he declared, not long after, that "the rest of his life must be one of penitence, to seek forgiveness for the wrongs he had done to the English Church."

It is quite reasonable that those about him should include all this perplexity of opinion amongst the symptoms of the mental aberration which soon supervened. On the other hand, it is open to others to argue that this was but the natural process of development of the great idea of his life, and that the unhinging of his mind was produced by the mighty internal struggle which the derangement of that process occasioned. What might have happened if he had lived in full vigour of intellect for a few years more, we ought perhaps scarcely to inquire. That he would have voluntarily seceded to the Protestant Church I do not believe. That he would have held his peace is no more likely. That private admonition might have led on to public disavowal is possible. He might have then become an aimless broken-hearted man,—as many a great genius had been before him; but he had lived out the term of his mission; his work was done. Amongst the many diverse workers who weave the web of human progress his share was done—honestly done—manfully and well done. Within a little time the dark cloud came over him, as it had come over many another, and will do to the end. It was the oft-told tale of the sudden going down of the sun at noon. The overstrained intellect had broken in pieces. Only one fragment of the once unsullied mirror reflected the light. They calmed his violence by pretending that a church of his was being delayed for want of a drawing. He took the pencil once more in his hand, and drew a clear intelligent design, that the work might wait no longer. There were a few months more of trouble and sorrow, and then there gathered a curious crowd in his Church of St. Augustine, to lay him where the weary are at rest.

Our story is ended; what is its moral? We have followed the history of a great genius,—a very remarkable leader in art—one whose character appears to stand alone in our generation, for the peculiar vigour of its fervid ardour, meditative power, persistent aim; and we reflect that the world is not degenerating yet, but very much the reverse, and that no amount of labour, no amount of success, no amount of fame, seems beyond the attainment of a clear head and a resolute will. But we have also traced the career of the man; and our pride in the great wrestler must be dashed with pity for his broken heart at last. He was born out of due time. Five hundred years before, perhaps five hundred years after, might have suited better this impetuous and reckless spirit,—impetuous and reckless beyond the comprehension of a cold and calculating age like ours. We start at the time during which he seeks to soar above all that is of the earth earthy; we deplore the unhappy fate which brings him to disappointment and despair; we feel a sense of relief when we see him fairly dead and buried, and his vagaries done; we admire his flight amongst the clouds, but we thank God that we ourselves can only read the ground.

At the close of the lecture a vote of thanks was passed to Professor Kerr.

INFLUENCE OF INTERNATIONAL EXHIBITIONS ON WORKMEN.

ON May the 29th, Mr. WILLIAM HAWES read a paper at the Society of Arts on "The International Exhibition of 1862." He demonstrated by facts and figures its superiority to the Exhibition of 1851. In speaking of the influence of such exhibitions on international progress, he said:—"In every department progress since 1851 is manifested in a degree unexpected by the most sanguine. Our trade has in the same time increased more rapidly than in any similar period in the history of the empire. How far this is to be attributed to the stimulus the Exhibitions of 1851 and 1855

gave to the industry of the world, each must form his own opinion; the old jealousy of allowing rivals, especially foreigners, to see what each was doing has passed away, and every intelligent manufacturer now relies upon a reputation gained by the most universal appreciation of his skill. But for International Exhibitions we should not possess a vast amount of useful information, gathered from all countries, of great value to art and industry. It is by comparing each Exhibition with its predecessor that we are able to ascertain, to record, and to profit by the progress of every country in each ten years; and this interchange of useful information enables all to appreciate the advantages belonging to the pursuit of each industry where it can best be conducted, and must lead to economy of production, to the advantage of labour, to the extension of commerce, and to improved commercial relations between manufacturers and producers in all parts of the world.

We have next to consider whether we are making the best use of the great advantages this wonderful collection of human industry places within our reach. I think it cannot be disputed that the highest object of an International Exhibition is the collection and dissemination of the most accurate information concerning the arts, manufactures, and commerce of all countries, thus illustrating the political, social, and commercial condition of their people. Another purpose is the collection of specimens of the mineral, animal, and vegetable productions, or of raw materials, from all parts of the world; but this is of secondary importance, as they can always be procured in the ordinary course of business by those interested in any particular branch of trade. But our workmen cannot obtain the information they require by any other means than those afforded by International Exhibitions. A workman may occasionally see a specimen of foreign handicraft, but he has no particulars on which he feels he can rely of its cost or the mode of its production. It may be a specimen only shown to him to depreciate the value of his labour, and, by reason of this uncertainty, it is sure to excite his jealousy and prejudice against foreign workmen. He cannot know the real position it holds in the country where it has been made, or whether it fairly represents its available mechanical skill. This information he can only acquire by the examination of foreign labour in various stages and forms of manufacture, and where can he obtain such knowledge but at an International Exhibition? To him the comparison of manufactures from all countries, and of many different specimens from each, is invaluable. No Mechanics' Institution can give him such useful knowledge, no teaching in the Department of Science and Art can give him such instruction, as he will derive from a few hours spent in inspecting the work, in its various forms, of his foreign rivals. To the intelligent and skilful workman an International Exhibition is an industrial college, teaching in the most practical manner—educating the eye, the hand, and the taste, stimulating industry and ingenuity—removing prejudices, and, by enlarging the sphere of observation and giving new ideas, making better workmen.

The importance of this inspection is very strongly felt in France, not only, as I shall subsequently show, by the numbers admitted to the Exhibition in 1855, but by the arrangements now being made for the careful examination of every branch of industry at this Exhibition by working men. Independently of clubs to bring over numbers of working men cheaply, there is a special sum appropriated by the Imperial commission to pay the fares of deputies to be elected from the great body of each trade by their fellow-workmen.

Feeling, then, as strongly as I do the invaluable effect which the inspection of this Exhibition must produce on working men, I am led to ask if it can produce results of the same national importance on the upper classes. I think it cannot; nor is it necessary that it should. No doubt it will elevate the estimation of the manufacturer in the minds of many it amuses; surprise and excite wonder by the intrinsic beauty and exquisite workmanship of the articles exhibited, and by the wealth of which it gives such striking evidence; flatter the national vanity to see England's superiority in so many branches of industry; but where, among these classes, can it afford industrial instruction, or stimulate industry, or produce any permanent result calculated to maintain the supremacy of England's manufactures?

But when we turn to the middle and industrious classes we find, besides the pride they feel in common with all, in the collection of the world's industry, a high appreciation of the great benefits they must derive from the practical instruction they receive at these International Exhibitions. They prove their sincerity by providing the security on which the money is raised for the erection of the building—they supply it when erected with the wonderful collection it contains, and then, by their anxiety to inspect the works of all countries, of their rivals at home and abroad, find a large portion of the funds by which the expenses of management are to be paid.

In 1851, Season tickets, and 20s. and 5s. admissions, produced	£67,514
The 2s. 6d. admissions	72,447
And the 1s. "	221,271
In 1855, the 5fr. admissions produced	£6,735
2fr. " "	7,663
1fr. " "	83,904
4 sous " "	17,459

So that the working classes of Paris, at 4 sous each, paid more than the 5 fr. and 2 fr. admissions together, and besides being visited by more than 2,000,000 of people paying but 4 sous each, the Exhibition was open free on one Sunday before it closed, when a vast number were admitted

who would not otherwise have seen it. The numbers then admitted were enormous, but no account was taken of them.

I have drawn this comparison because I conceive it to be true and just, and necessary to illustrate the view I take of the proper mode of making the utmost use of these most valuable of modern institutions. Their object is undoubtedly to disseminate information among the great mass of master manufacturers and men in all countries, to improve their taste and stimulate their industry. Any arrangement which excludes the great body of those for whose benefit such institutions were inaugurated, is inconsistent with the broad principles of universality upon which they are based; such exclusion is in antagonism to the publicity which is demanded now-a-days in every sphere of action. It checks the operation of the principles of free trade, for what is the use of free trade by law, if, when we have the opportunity of teaching our workmen how to compete with their foreign rivals, we refuse to allow them to take advantage of it. Unless this is done, a demand is created for foreign works and our own producers are prevented from learning how to compete with them. You thereby injure the workman, the dealer, and the merchant.

Now, then, do I apply these observations to the present time? I say we open the Exhibition too many days in proportion to the rich, and too few to the workmen. We do not give to our workmen the advantages given to the French workmen. I believe in the low tariff to produce good pecuniary results. The penny postage stamp produces more than the eight-penny or shilling letter. I have greater faith in the realisation of a large sum by a low tariff than by a high one. I would not open the Exhibition every day at the lowest rate; but whilst, in the interest of science and of instruction, and I may say of fashion, I would have one day weekly at a comparatively high-rate of admission, and other days at one shilling for the general bulk of the visitors, I would devote certain days weekly to still lower rates, and as exclusively as possible to working men. Let them feel that an International Exhibition has a truly national object—that they are to derive benefit from it, and then they will learn to appreciate more thoroughly the sacrifice of time, the labour, mental and bodily, which have been required to bring such collections of industry together, and they will retire from the examination of these triumphs of skill and manufacturing industry better satisfied to contribute towards and to aid the exertions which are being made to improve general education, and to enter more fully into the importance and the utility of the large votes for educational and artistic purposes which every year pass the legislature.

GENERAL ITEMS.

MOLYNEUX ASYLUM, DUBLIN.—The new Molyneux Asylum and National Institution for blind females of Ireland, at Dublin, was opened last week. Accommodation is provided for about 100 blind females. The chapel, which will be opened to-day (Friday) will contain seats for 1,250 persons. The new asylum, it is calculated, will be supported thus:—£250 per annum will be derived from the interest of legacies to the old Molyneux Asylum; £300 yearly will probably be obtained from collections in the chapel, being $4\frac{1}{2}$ per cent. on the cost of its erection; and it is hoped that £1,500 will annually be subscribed by all Ireland for the support of the institution. The asylum is a handsome building, in the Tudor Gothic style of plain character, with high pitched roofs and gables, and dormer and mullioned windows. Granite is the material used, the window and door dressing being chiselled, and the general face of the walls of hammered stone. It has three floors. On the lower or basement floor are the kitchen, dining-room, laundry, and servants' apartments. On the ground floor are a day-room, a music-room, and a board-room; these three chambers being divided by folding doors, so as to admit of being thrown into one large apartment for Sunday school and other meetings, capable of accommodating 300 or 400 persons. To each room there is a distinct side entrance. The rest of this floor is occupied by the secretary's room, library, and matron's apartments. The upper or highest floor contains the dormitories, lavatories, and bath-room: also the infirmary, which has a distinct entrance from the main staircase, and is quite separated from the rest of the house. Mr. Rawson Carroll is the architect, and Mr. Bolton is the contractor for the works.

ANCIENT JERUSALEM.—According to the *Jewish Chronicle*, the foundation of the inner wall of Jerusalem has lately been discovered. As far as it has been laid bare it consists of very large stones, and the solid masonry is just the same as that of the western wall of the temple. It is about four yards distant from the present wall.

CURIOS DISCOVERY.—The other morning, while some workmen were engaged lowering the ground in a yard connected with Messrs. Southwell's factory, at Bridgnorth, they discovered the skeleton of a man in a most perfect state of preservation. It rested in a rude sarcophagus hewn out of the rock, and was evidently the remains of either a young man, or one in the prime of life, the teeth being perfect and regular. The vertebral column and the back ribs were perfect, as also were the arms, legs, and feet, but the front ribs had fallen in. This grim relic of a bygone age had, when in the flesh, been one of the order of Grey Friars, which was introduced into this country in the reign of Henry III., six hundred years ago.

BUILDING FOR MARINERS, AT MARGATE.—A committee has been formed, with the Archbishop of Canterbury as patron, to obtain the means of erecting, on a freehold site close to the pier, a building which on week days can be used as a reading-room, and on Sundays as a place of worship. The site has been purchased for £200, and it is estimated that another £500 will be required for the contemplated buildings.

ART UNION OF GREAT BRITAIN.—The fifth drawing of the Art Union of Great Britain is announced to take place in the Free Trade Hall, Manchester, on Saturday, June 28, when upwards of 1,000 works of art, including 250 paintings, will be allotted. We notice from the prospectus that 302,168 tickets were sold in the four previous drawings, and 4,200 prizes distributed, including 853 paintings, in amounts varying from £150 downwards, being one prize in each 71 tickets. Each purchaser of a shilling ticket has a chance for each of the prizes, and we would therefore recommend this institution to the support of the working classes, to whom it offers an opportunity of possessing a valuable painting or other work of art which they could not otherwise obtain.

THE ROMSEY EXHIBITION.—This interesting exhibition was finally closed last Monday week, when the *fête* at Embury Park very appropriately signalled its termination. Lectures have been given without intermission since the opening on the 25th of April.

THE STONE-CUTTING MACHINE.—The *Dundee Advertiser* states that a meeting of the Master Builders of Dundee was held there on Friday, at which the introduction of the stone-cutting machine was discussed very fully; and it being found that entire unanimity prevailed, a committee was appointed to make the necessary arrangements for the formation of an association to procure and work one or more of the machines in Dundee. The association, although it will be supported, no doubt, principally by builders, is intended to be wrought as a distinct concern, with a share capital, which will be employed not only in obtaining the necessary machines, but in purchasing and dressing the various kinds of stones employed in building in this quarter, of every variety of which a large dressed stock will be kept in hand, from which the builders may be supplied in any quantity. In Edinburgh, also, the master builders have resolved upon procuring several of the machines, which are manufactured by the Messrs. Munro, of Arbroath.

MONUMENT TO THE YOUNGEST DAUGHTER OF THE LATE SIR HENRY HAVELOCK, OF INDIAN RENOWN.—A tasteful monument has just been placed in the Dean Cemetery, Edinburgh, in memory of the youngest daughter of the late Sir Henry Havelock, K.C.B., who died in August last. The monument, which is the work of Mr. S. McGlashan, sculptor, Canonmills, has been erected by Lady Havelock.

THE CONSERVATIVE LAND SOCIETY IN NORTH ESSEX.—The forty-fourth purchase of this Society, and the first in the northern division of Essex, has just been made at Colchester. It is an excellent building property, situate just outside the town on its southern side, beyond the camp and Government barrack lands, and comprising five fields between the roads which there fork—the left leading to Aberton, and the right to Berechurch. A new branch railway, from the Stour Valley branch of the Eastern Union, is contemplated, having its terminus in the neighbourhood of St. Botolph's Church, which will greatly enhance this property for building purposes.

ANCIENT RELIC.—The editor of the *Falkirk Herald* states, that he has been shown a casting from an old stone which was discovered amongst the rubbish of the ruins of the parish church at Falkirk, immediately preceding the present one. The stone was discovered in 1810, and from the interesting description it bore, was sent to the British Museum in Edinburgh. Two castings from the stone were made at Carron by Mr. M'Luckie, now clerk in the Falkirk Iron Works. The inscription on the old stone (of which the casting is a *fac simile*) is as follows; "Hic funeratus D E Z N Rob Graham. Ille eversus vall Severus A.C. 415—Fergusius II., R. Sco;," and of which the following is a translation: "Here was interred (the thane) Robert Graham; he overthrew the wall of Severus, in the year 415.—Fergus II., King of Scotland.

ARCHITECTURAL EXHIBITION.—A lecture was delivered on Tuesday evening last week, at the Architectural Exhibition, Conduit Street, Regent Street, on "Conventionalism in Ornament," by Mr. J. P. Seddon.

LIGHTHOUSES IN THE RED SEA.—The works for the execution of lighthouses in the Red Sea, says the *Moniteur de la Flotte*, are being executed with rapidity. The *Zafarana*, situated in the Gulf of Suez, has been lighted since the beginning of January, and the *Ushrufee*, which is placed in the Jubal Strait, and the *Dedaley* on the rock of that name in the middle of the Red Sea, will be in use before the end of the present year. Those three lighthouses belong to Egypt, and are maintained at the expense of the Egyptian Government. The Peninsular and Oriental Steamship Company has undertaken to deliver by its vessels in passing the oil for lighting, and the necessary provisions for the keepers.

THE LIGHTHOUSE AT GREAT ORMSHEAD.—The works of excavation, construction of roads, raising of smithies and workshops, preparatory to the erection of a Lighthouse on the summit of the huge rock on the Great Orme, usually called "Y Pen Mawr," have been commenced. The site selected for this long-needed aid to navigation, is on the most northern point of the Gogarth promontory, and commands a view of Beaumaris Bay and Menai Straits, with the Anglesea coast, as well as the headlands of Flintshire, &c. As part of the mountain lies nearest the direction of vessels sailing up and down the borders, the danger has been much felt by the mariner, and hence the necessity of proper lights and signals for protection against wrecks and damage, especially when the heavy sea peculiar to the place, at certain tides, becomes uncontrollable, and breaks against the rock with much fury. The spot is a little below the walk round the Head, near the half-way mark, on the east side. When completed, of course, it will be an edifice of much attraction and interest to the public.

METROPOLITAN BOARD OF WORKS.—A meeting of the Metropolitan Board of Works was held at the offices, Spring Gardens, on Friday last, Mr. Alderman Lawrence in the chair. On the motion of Mr. Dixon (member for Limehouse) it was ordered "That it be referred to the Committee of

the whole Board on the Covent Garden Approach, and Southwark and Westminster Communication, who are already authorised to put in force the powers in the Victoria Park Approach Act, 1858, necessary for obtaining possession of the property required for the formation of the Victoria Park Approach, reporting their proceedings from time to time to the Board (all warrants upon the treasurer, for the payment of moneys under such reference, being signed by nine members of the Committee), to consider the great advantage of purchasing, for the sum of £200, four lots of freehold building land, adjacent to a very narrow slip of frontage belonging to the Board in the Victoria Park Approach, which would not only improve the road, but likewise recoup the Board to the amount of from £400 to £600 of the £750 paid to Mr. William Sykes."

MINT AT CALCUTTA.—Considerable progress has been made with the building for the new Mint at Calcutta. The walls have reached the height to which it was intended to carry them, and part of the roof is completed. The machinery, which was constructed by James Watt and Co., of Soho, near Birmingham, has all reached its destination, and the boilers are already set. Two steam engines of 40-horse power each are intended to propel the rolling mills, cutting-out machines, and stamping-presses, of which latter there will be twelve. There are in all five boilers, on the Cornish principle. These are each 30 ft. in length, and 7 ft. in diameter. There are two flues of 2 ft. 6 in. diameter, running longitudinally through each boiler. So admirable will be the arrangements of the new Calcutta Mint, that it will undoubtedly form, when completed, the most perfect establishment for coining money in the world. There is already, and has been for many years, one mint in the capital of Bengal, of considerable productive power, but this will probably be devoted, after the new mint shall have been started, to the copper coinage only. The new establishment will be in that case employed exclusively in the creation of gold mohurs, and silver rupees, with their smaller relative denominations of coin.

On Monday last, a meeting of the Inventors' Institute was held at the temporary offices, 26, Great George Street, Westminster, when the rules and regulations of the Society were agreed to. Its objects are:—1. To protect inventors' interests, and defend the privilege of obtaining letters patent. 2. To promote improvement in the patent laws. 3. To facilitate the diffusion of information in reference to inventors and other subjects beneficial to inventors and patentees. A subcommittee was formed to complete the organisation.

PRITCHARD MEMORIAL.—The fund collected at Broseley, Bridgnorth, and the neighbouring parts of Shropshire, amounting to nearly £3,000, is to be devoted to two distinct objects, in memory of the late Mr. Pritchard, high-sheriff of the county. Firstly,—In the erection of a memorial church, at Jackfield, near Broseley, for which a design by Mr. Blomfield, architect, of London, has been selected in competition. Secondly.—Designs have also been invited for a memorial building, to be erected in the centre of Broseley, over a well and reservoir that have lately been constructed for the purpose of supplying the town with water. The first premium of £20 has been awarded to Mr. R. Griffiths, architect, of Bridgnorth. A second premium of £5 was also unanimously awarded to Mr. W. Thursfield, of Broseley, accompanied by a vote of thanks from the Memorial Committee, "for the time and attention he has given to the preparation of the admirable set of Working Drawings for the Memorial Building."

SOUTH KENSINGTON MUSEUM ART OBJECTS EXHIBITION.—A private view of the "SPECIAL EXHIBITION OF LOANS OF ART OBJECTS" took place on Tuesday, at South Kensington, and was well attended. The show is such a good one that, despite the counter attractions of the International Exhibition, it will probably always draw a large number of visitors. Her Majesty has lent some excellent porcelain vases; Baron Lionel de Rothschild sends a complete case; and a host of the best-known names in England are represented by articles of more or less interest. There are massive golden shields, and china cups; as well as majolica ware, ornolu, and marqueterie. An infinite variety of objects, indeed, is the chief characteristic of the display—drinking-cups, vases, match-boxes, spoons, caskets, tankards, teapots, coloured glasses. We might reprint some pages of the Industrial Catalogue, and yet fail to give an adequate idea of the articles here collected. Of course, many of them are merely interesting, either for the value of the material or the quaintness of the design; but on the whole they are really beautiful. Among those who have kindly lent *objets d'art* are most of the prominent members of the aristocracy; and the list of contributors also includes the names of public corporations and of the universities.

THE FLOOD IN THE FEN DISTRICTS.—It appears that, unless some unfortunate catastrophe should occur, the inundations in the fen districts of Norfolk have reached their utmost limits. The high tides have passed without the eastern bank of the drain giving way, so that the districts opposite to those that are under water have thus far escaped the calamity with which they were threatened; and the speedy completion of the cofferdam will, it is believed, effectually stop the progress of the flood, and form a barrier against the attacks of the sea water. This work is being prosecuted with great activity and success.

MEMORIAL TO THE LATE PHILANTHROPIST, DR. ANDREW REED.—Shortly after the demise of this divine and philanthropist, a suggestion was made that a monument should be erected over his grave by the young men and women educated in the various orphan asylums of which he had been the founder. On application to his family, they very readily consented to the proposal, and arrangements were in progress to this end, when a very pleasant incident occurred to alter the form of the project. Some

members of the Board of Management of the London Orphan Asylum (the first of Dr. Reed's institutions, but one from which conscientious differences had caused his retirement) heard of the proposal, and suggested that the chapel of the asylum at Clapton was the most suitable place for a memorial from such a source, and they offered to erect a tablet, if that should be desired. As all the promoters of the scheme, and all who had contributed, were London Orphan Asylum ex-boys, this arrangement was gladly entered into. Mr. Felix Miller, sculptor, an old London Orphan Asylum pupil, has undertaken the execution, in white marble, of an emblematical design for a tablet, in bas-relief, representing, in full length figures, a widow seated with two young children at her side, and Dr. Reed in the act of handing to the children, with one hand a book, and with the other bread — education and maintenance. The expense will be considerable, but there will, doubtless, be no lack of funds for the purpose.

THORPE MALSOR.—A beautiful stained-glass window has been recently placed in the picturesque little church of Thorpe Malsor. It is intended as a memorial of the late Hon. Caroline Eliza, wife of T. P. Maunsell, Esq., and mother of the late Recorder of Stamford. The four principal lights represent the Nativity, the Crucifixion, the three Marys, and the Ascension. Above these are four smaller lights, which contain symbols of the four Evangelists. These are surmounted by two angels bearing scrolls, and by an emblematical representation of Christ in Glory. The whole presents a rich appearance, strangely at variance with the rude appearance of the pews and other portions of the edifice. Underneath the window is a band formed of glazed encaustic tiles, on which are inscribed "In memory of the Hon. Caroline Eliza Maunsell, who died March 14th, 1860, aged 73." The letters are yellow and white on a chocolate coloured ground, edged with a yellow line, and bordered with green. The whole was designed and completed by Messrs. Ward and Hughes, of Frith Street, London.

HASTINGS MEMORIAL TO THE LATE PRINCE CONSORT.—The meeting of the subscribers for the purpose of finally selecting the design for a proposed clock tower at the Priory, Hastings, as a local memorial of "Albert the Good," has been held, and out of thirty-seven designs, one sent by Mr. Edward Heffer, of Liverpool, was chosen, and a guarantee given that the cost of erection should not exceed £500. It is to be built of Bath stone in the late period of Gothic architecture, height of clock chamber 30 ft., total height 65 ft. Above the entrance and side panels, in quatrefoils, is introduced the arms of Hastings, cut upon appropriate shields; above the gable, inserted into a niche, a statue six feet high, of the late Prince Consort, in his robes as Chancellor of the University of Cambridge; and in the panels below the dials, the arms of Saxe Coburg and Gotha. The dials are to be inserted in an octagon, giving variety to the lines in the composition; and on one side of the tower a granite basin for a drinking fountain is proposed.

THE EUROPEAN ASSURANCE SOCIETY.—At the last annual meeting of this Society, Mr. H. W. Wickham, M.P., in the chair, the report stated the policies issued during the past year to have produced £13,674 in new premiums; that the total amount of premiums received was £130,087; and that the assets had been increased £40,437; also, that in the Fidelity Guarantee Branch the balance carried over upon the year's operations was £6,431.

CIIPS.

TWO new rooms have just been opened in the Museum Napoleon III., at the Palais de l'Industrie, Paris. They contain the objects obtained by Mr. Ernest Renard, during his mission in Phœnicia. The contents of the first room comprise sixteen magnificent sarcophagi in white marble, and almost all intact, a quantity of jewels, in gold and precious stones; bronzes, glass, pottery, inscriptions, and fragments of monuments in marble, stone, and lava. In the second room is placed an enormous mosaic, 33 ft. long, and about 20 ft. wide, found at Djebet. It is divided into square compartments, containing representations of human heads of almost natural size, and figures of animals and fish. A very wide and handsome foliage forms the border.

A large number of masons and other workmen are employed in the erection of the Royal Mausoleum in Frogmore gardens, destined to receive the ashes of the late Prince Consort. The base of the structure is nearly completed, and scaffolding of 100 ft. in height is in course of construction, for raising and depositing the heavy blocks of stone. Accommodation will be afforded within the Mausoleum for nearly 100 coffins.

In quarrying what is called the Black Rock for building stone, for the formation of portions of the Severn Valley Railway, an interesting discovery has just been made. The rock is one of the sand-rocks belonging to the lower coal measures, which in this locality are known to be rich in the fossil flora of the carboniferous period, and during last week the workmen have exposed to view a fossil tree of large dimensions. It is eight feet in circumference, and stands perfectly upright. It is probable there are eight roots, although five only have as yet been uncovered. Each root is 2 ft. 10 in. in circumference, and each at a distance of eighteen inches from the trunk divides into two. These strike down into a yellowish shale or underclay. The tree appears to have decayed down to within thirteen inches of the root, for there is a clear impression of a branch which had fallen across. Another tree is now being uncovered within a few feet of this one. This is also of large proportions, and on the same coal. The rock for nine feet above is full of other fragments, and smells strongly of petroleum, with which it is strongly charged. Above this rock is a seam of coal twenty-one inches thick, and above that a whitish clay.

On Friday morning a party of navvies commenced sinking a shaft at the western end of the proposed site for the goods station under the intended dead meat and poultry market at Smithfield.

The next congress of the Archaeological Institute of Great Britain will be held at Worcester, July 22nd. A special exhibition has been formed of specimens of enamel and niello, which will be open to the 14th inst.

A scaffolding has just been erected at the west front of York Minster, for the purpose of easing the magnificent decorative window with plate-glass. Opinions differ as to the policy of this proceeding, but the ostensible object is to protect the beautiful stained glass.

The new bank to be erected in the market-place of Spalding, Lincolnshire, on the site of the shop lately occupied by Mr. John Cave, is to be constructed by Mr. Sneath, of Baston, his contract for the building having been accepted by the Board of Directors. The amount is £2,067. The building is to be handed over to the directors by the end of December next.

An application has been made on behalf of the proprietor of a novel style of tram or street railway, to the Marylebone council, for permission to lay down, as an experiment, 100 yards in Oxford Street or some other public thoroughfare. The principle is said to be in operation in Salford, near Manchester, and obviates the objections of Mr. Train's tramway, no trams being above the surface, and the carriages kept steady by a lifting centre wheel, running in a centre groove.

The opening of the line of railway known as the Colne Valley Railway Extension, between Hedingham and Yeldham, Essex, took place last week under the most auspicious circumstances.

The council and members of the Institute of Civil Engineers, and several scientific men of eminence, at the invitation of Mr. Bazalgette, engineer to the Metropolitan Board of Works, paid a visit of inspection to the Northern Outfall Sewer, in connection with the Main Drainage, on Saturday. About eighty gentlemen attended, among whom were Captain Vetch, R.E., Professor Donaldson, Alderman Rose, Dr. Arnott, Mr. Scott Russell, Mr. W. Haywood, Mr. Joseph Cubitt, Mr. Bunning (city architect), Mr. Vulliamy (superintending architect to the Metropolitan Board of Works), Dr. Letheby, Mr. R. P. Brereton, and Mr. Furness, contractor of the work.

The Metropolitan (Underground) Railway was inspected on Saturday by the Chancellor of the Exchequer and his lady, and about twenty of the nobility. The inspection was commenced at Paddington, and continued to Victoria Street, Clerkenwell. At Euston Square the visitors were received by Mr. Jay (contractor), Mr. Cordell (manager), Mr. Fowler (engineer-in-chief), and Mr. Johnson (resident engineer).

The iron-work outside the great dome of St. Paul's Cathedral has been painted with Messrs. Peacock and Buchan's composition for the preservation of iron.

A young sculptor, Mr. George Maccallum, has just completed a model, in clay, of a statuette of the late Principal Cunningham, of Edinburgh; which, with the pedestal, stands about two feet high. The principal is represented in the moderator's dress, sitting with legs crossed. He holds a book in his left hand, and his right arm is thrown carelessly over the back of the chair. The attitude is easy and natural, and the likeness very characteristic and truthful.

An elegant and extensive suite of rooms has been recently erected as a Soldiers' Home or Club-house, for the military stationed at Chatham garrison.

A drinking-fountain of a handsome character has just been opened at Hastings. The cost, about £200, was defrayed by public subscription — voluntary in every respect, as no person was asked to give — and it was raised as a testimonial to the worth of the Countess of Waldegrave. The fountain adjoins the Holy Trinity Church, Robertson Street, with which edifice it is in keeping, and is eighteen feet high, erected of Portland stone. Three sides of the basement are inscribed panels, and beneath the panels are the jets and basins; and an open canopy, supported on four granite pillars, covers a sculptured group of our Lord and the Woman of Samaria. Figures at the corners, outside the pillars, represent the four evangelists; and the monogram, "I H S," is carved on the drapery of the canopy.

The first drinking-fountain in Durham was opened a few days ago. The fountain was erected by Mr. Joseph Taylor, and is situated at the bottom of Elvet Bridge leading to the baths and washhouses — a very convenient spot. It is of a neat and elegant design. The front is composed of bronzed metal, surmounted by the Queen's head in bas-relief, with wreathed figures on each side.

On Monday morning the North London Railway opened a branch to Kensington in connection with their line. A number of trains run direct from Bow to Kensington, stopping at all intermediate stations, accomplishing the entire distance in a little under an hour.

A return just issued shows that of the £2,000,000, as the first instalment towards the expense of coast fortifications authorised to be raised by loan by the Act of 1860, £989,000 have been actually expended up to the present upon works and land, and that purchases of land have been made involving further liabilities to the amount of £695,000, thus leaving a balance of £316,000 unexpended. The amount of contracts which have been entered into for works of fortifications, up to the present date, is £5,680,000, including £1,220,000 for completing works in progress before the passing of the act; and the estimated cost of the land to be paid for is £1,030,000. These fortifications comprise seventy-one distinct works, and are to be constructed at Portsmouth, Isle of Wight, Plymouth, Pembroke, Portland, Gravesend, Medway and Thames, Chatham, Dover, and Cork.

In the House of Commons on Tuesday night, Mr. B. Cochrane gave notice, that on an early day he would call the attention of Her Majesty's Government to the state of the Chapter House at Westminster.

Those who have so often laughed over the productions of Mr. Leech, have now an opportunity of seeing his life-like sketches reproduced in oil colours, and on a greatly increased scale. The present series consists of sixty-five pictures, selected from the more recent numbers of *Punch*; and on the walls of the Egyptian Hall may be seen specimens of the "Swell," the street boy, the modern young English lady, and that parental type "Paterfamilias," painted in a bold effective manner, the character of the original sketches being in most cases excellently preserved.

The annual dinner of the Architectural Association will be held in the Whittington Club, Arundel Street, on Wednesday evening next.

The annual conversazione of the Institute of British Architects will be held on the 25th instant.

The arrangements for the great social science Congress are now complete. The proceedings were opened by a special service in Westminster Abbey, on Wednesday, when the Dean of Chichester preached. The members assembled in the Jerusalem Chamber previous to the service, and proceeded in a body into the Abbey. The opening meeting was held in Exeter Hall in the evening, when the president, Lord Brougham, delivered the address. To day the departments will assemble at Guildhall, at 11 o'clock, for the reading of papers and for discussion. The evening discussions at Burlington House on subjects of special interest are arranged as follows:—Friday, June 6—Education Department, National Education; Trade and International Law Department, Belligerent Rights. Monday, June 9—Punishment and Reformation Department, Convict System; Social Economy Department, Habitations of the Working Classes. Tuesday, June 10—Education Department, Middle-class Examination; Public Health Department, Effect of Occupations on Health. Wednesday, June 11—Workhouse Visiting Society, Report of Society. Lord Lyttelton will take the chair. Thursday, June 12—Jurisprudence Department, Marriage Laws of the United Kingdom; Public Health Department, Sanitary Statistics. Tickets for the entire meeting can be obtained at the offices, at 12 Old Broad Street, and Guildhall; and also special tickets, for ladies only, for the grand *soirée* in the Palace at Westminster on Saturday evening.

TENDERS.

WEST KENT INFIRMARY, MAIDSTONE.

For alterations and new wing to the West Kent Infirmary, Maidstone; Mr. Henry Blandford, architect.

Girmstead and Bridge.....	£4,182 0 0	Cobb.....	£3,582 0 0
Sutton and Vaughan.....	3,447 0 0	Chambers.....	3,340 0 0
Anscumb.....	3,401 0 0	Naylor.....	3,293 0 0
Clements and Wallis.....	3,386 0 0		

The tender of Mr. Naylor, of Rochester, was accepted.

WORKS AT ABNEY CHAPEL AND SCHOOLS.

Mr. John Tarring, architect, Bucklersbury.

Woodward.....	£1,611 0 0	Dove, Brothers.....	£1,497 0 0
Little.....	1,589 0 0	Richards.....	1,479 10 0
Wood.....	1,577 0 0	Saunders.....	1,428 18 0

CATTLE MARKET, COLCHESTER.

For the construction of a shed and other works, to complete the market.

Orrin.....	£317 0 0	Everitt.....	£304 10 0
Shepherd.....	303 18 0	Dobson.....	287 0 0
Hum.....	300 10 0	Lee and Baker.....	279 0 0

The lowest tender was accepted, and the whole work is to be completed by Saturday, 5th July.

TUNBRIDGE WELLS.

For a detached villa residence, with conservatory, &c., Tunbridge Wells, for Captain Bingham, R.N. Mr. W. Bond, architect. Quantities supplied by Mr. Charles M. Strang.

Grover.....	£1,592 4 0	Messrs. Pink.....	£1,534 0 0
Perigo.....	1,561 2 0	Walker.....	1,505 5 3
Mercer and Canfield.....	1,550 0 0	Edwards and Walking.....	1,428 8 11

WORMLEY, HERTS.

For building a new south aisle to St. Laurence's Church, Wormley, Herts. Mr. Joseph Clarke, F.S.A., architect, 13 Stratford Place, W.

Mr. G. F. Arnold.....	£248 0 0	Mr. Hunt.....	£651 0 0
Mr. J. W. Barnes.....	721 5 5	Messrs. Bowley, Brothers.....	646 0 0
Mr. Smith.....	680 0 0	Mr. Cousins.....	516 0 0
Mr. Dickinson.....	655 0 0		

LEICESTERSHIRE.

For rebuilding a portion of the tower and spire of North Kilworth Church, Leicestershire. Mr. Joseph Clarke, F.S.A., architect, 13 Stratford Place, W.

Mr. J. Bromwich.....	£614 0 0	Mr. J. Law.....	£385 0 0
Messrs. Bowley, Brothers.....	570 0 0	Mr. J. Finn.....	370 0 0

WORMLEY, HERTS.

For building new schools and master's residence, at Wormley, Herts. Mr. Joseph Clarke, F.S.A., architect.

H. W. Dickinson.....	£1,125 0 0	Hunt.....	£1,075 0 0
J. W. Barnes.....	1,121 0 0	Bowley.....	1,050 0 0
Cousins.....	1,118 0 0	Arnold.....	928 17 6
Smith.....	1,080 0 0	Nicholls.....	800 0 0

JOHN ADDEY'S CHARITY ESTATE, DEPTFORD.

For alterations and additions to house and schools for the trustees of John Addey's Charity Estate, Deptford; Mr. Joseph Liddiard, architect.

T. O. Todd.....	£1,800 0 0	T. Rodkin.....	£1,525 0 0
B. Stone.....	1,649 0 0	H. George.....	1,431 0 0
J. and F. Coleman.....	1,584 0 0	J. Walker.....	1,420 0 0
H. and C. Bird.....	1,565 16 0	W. T. Hunt.....	1,385 0 0
C. Hudson.....	1,539 0 0	J. and T. Todd.....	1,375 0 0
A. J. Smith.....	1,530 0 0	W. Pearson.....	1,355 10 0

ST. JOHN'S CHURCH, BATTERSEA.

Mr. E. C. Robins, architect.

Marsland and Son.....	£3,250 0 0	Nicholson.....	£2,980 0 0
Newman and Mann.....	3,115 0 0	Maers.....	2,973 0 0
Brass.....	3,075 0 0	Dove.....	2,867 0 0
Lathey.....	2,987 0 0	Sharpington and Cole.....	2,847 0 0

NATIONAL SCHOOLS, ISLINGTON.

For the erection of new girls' and boys' National Schools and class rooms for the district parish of St. Paul, Islington. Messrs. H. and J. D. Mathews, architects, 10 Cloak Lane, City. Quantities supplied.

Foranores.....	£1,215 0 0	Foster.....	£169 0 0
Rudda.....	1,150 0 0	Nash.....	967 0 0
Hanney.....	1,120 0 0	Hill and Son.....	945 0 0
Fox.....	990 0 0		

The above include the value of the old materials of the present buildings.

PUBLIC PARKS, SOUTHAMPTON.

For laying out ground in the public parks, Southampton. Messrs. Guillaume, Parnento, and Guillaume, architects and surveyors.

Cox.....	£100 0 0	Croft.....	£98 0 0
Hewitt and Beaman.....	100 0 0	Barnes (accepted).....	92 0 0

HAVELOCK ROAD, SOUTHAMPTON.

For making "Havelock Road," through the Macland's Park. Messrs. Guillaume, Parnento and Guillaume, architects and surveyors.

Croft.....	£104 10 0	Barnes.....	£97 10 0
Hewitt and Beaman.....	102 0 0	Cox (accepted).....	95 0 0

PREMISES, HIGH STREET, SOUTHAMPTON.

For alterations to the premises No. 3, in the High Street, Southampton, for Mr. E. M. Passenger. Messrs. Guillaume and Co., architects.

Scott.....	£279 0 0	Adams (accepted).....	£254 0 0
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COTTAGE, SOUTHAMPTON.

For erecting a cottage on the Belle-Vue Estate, for Mr. G. Calnes. Messrs. Guillaume, architects.

Evans.....	£230 0 0	Philps (accepted).....	£197 0 0
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MANSION, NEAR TOTTON.

For erecting a mansion near Totton, without offices, &c., for W. F. Wingrove, Esq. Messrs. Guillaume, Parnento, and Guillaume, architects.

Scott.....	£5,267 0 0	Gambling.....	£4,650 0 0
Phillips.....	5,175 0 0	Bull (accepted).....	3,983 0 0
Fletcher.....	4,935 0 0	Adams.....	3,785 0 0
Stevens.....	4,897 0 0		

SHOP AND RESIDENCE, SOUTHAMPTON.

For building a shop and residence in the Above-Bar Street, Southampton, for A. Andrews, Esq. Messrs. Guillaume, Parnento and Guillaume, architects.

Blackman.....	£1,562 0 0	Bull (accepted).....	£1,046 0 0
Philps.....	1,222 0 0	Martin.....	1,000 0 0
Adams.....	1,192 0 0	Evans.....	600 0 0
Bailey.....	1,050 0 0		

A LODGE, MUSWELL HILL.

For erecting a lodge at Fortis Green, Muswell Hill, for Mr. H. Smith. Mr. F. G. Widdows, architect.

Langmead.....	£450 0 0	Jeffs.....	£350 0 0
Flint.....	418 0 0	Plowman.....	333 0 0
Greenwood.....	375 0 0	James and Ashton.....	323 10 0

STABLING, BAYSWATER.

For the erection of stabling, Westbourne Grove, W., Bayswater. Mr. W. Sim, Dane' Inn, architect.

Fish.....	£470 0 0	Cooper.....	£379 0 0
Cowland.....	391 0 0		

THE CITY.

For the erection of three warehouses in Bow Lane and Watling Street, City, for William Vivian, Esq. Tillott and Chamberlain, architects. Quantities supplied.

Turner and Sons.....	£3,979 0 0	Wills.....	£3,497 0 0
Laurence and Son.....	3,740 0 0	Brass.....	3,465 0 0
Fish.....	3,697 0 0	Cannon.....	3,393 0 0
Piper and Wheeler.....	3,553 0 0	Ashby and Sons (accepted).....	3,358 0 0

VILLA, BENWELL.

Tenders for a new villa at Benwell Park, for Mr. Joseph Carr. Mr. J. E. Watson, architect, Newcastle Square.

Masonry and Carpentry— W. Gibson (accepted).....	£1060 0 0	J. & W. Gibson.....	£1187 0 0
E. B. Reed.....	1074 0 0	Scott & Reed.....	1170 0 0
Masonry— Thomas March.....			£564 16 0

Carpentry—
Bornup..... £398 6 0 | Waite & Howard..... | £550 0 0 |

Dobson.....	565 12 0	Cowsay.....	536 0 0
Slating— Beck (accepted).....	£24 0 0	March.....	£85 10 0

Plumbing, &c.—
Gibholm (accepted)..... £100 0 0 | Scott & Reed..... | £92 15 0 |

Plastering—
Wilkinson (accepted)..... £156 0 0 | Mead..... | £157 0 0 |

March..... 170 8 0 | Scott & Reed..... | 144 11 3 |

Painting & Glazing—
Cawson (accepted)..... £87 10 0 | Gibson..... | £115 6 0 |

Richardson & Co..... 96 0 0 | R. Richardson..... | 118 12 0 |

COMPETITIONS OPEN.

CHURCHES.

HOLYWELL, NEAR ST. IVES.—For the restoration of Holywell church, near St. Ives, Hants. Plans, &c., may be seen at the office of Mr. Hutchinson, architect, Market Place, Hantsington, who will receive tenders to June 10.

SOUTHAMPTON.—The churchwardens and church committee of St. Mary's, Southampton, are desirous to receive tenders for cleaning, colouring, painting, and repairing the parish church. Specifications may be seen at the vestry, on application to Mr. Bromley, the sexton, St. Mary's Street, on and after Monday, June 2. Tenders to be forwarded to Mr. R. E. Page, 95 St. Mary's Street, on or before Saturday, June 14.

LEAMINGTON.—Plans and estimates, in sections, are required for the completion of the parish church of Leamington. The nave, the chancel, and the north transept being already built, it is intended to proceed to erect the remaining portions of the work in sections. Architects are invited to send in plans and estimates, for erecting the south transept, the vestry, the lantern tower, and the bell tower; which it is intended to build in strict harmony with the architectural style of those portions of the church now erected. Increased accommodation in the church is most desirable. A premium of £20 will be given for the best set of plans and estimates in the opinion of the Committee, which must be sent, sealed and under motto, to Mr. G. Rogers, Newbold Street, Leamington, on or before the 21st June, of whom all further particulars may be obtained.

FARMHOUSE, ETC.

HEAVITREE, DEVON.—For the erection of a farmhouse and buildings at Heavitree, in the county of Devon. Plans and specifications at the offices of Messrs. Geare, Mountford, and Geare, Queen Street, Exeter. Tenders, endorsed "Tender for farmhouse and buildings at Heavitree," to be sent to Messrs. Geare, Mountford, and Geare on or before June 14.

ASYLUM.

FAREHAM, HANTS.—For enlarging two day rooms at the County Asylum, Fareham. Plans and specifications at the office of the County Surveyor. Tenders, endorsed "Tender for enlarging day rooms, County Asylum," to be sent to Mr. Thomas Stopher, County Surveyor, on or before Friday, June 13.

HARBOUR.

SOUTHAMPTON.—For taking down and rebuilding a portion of the watergate, quay wall, timber piling, &c., of Southampton harbour. Plans and particulars may be seen at the office of the surveyor, Mr. Geddes, Above Bar Street, and tenders to be delivered at the clerk's office, 3 Lower Bugle Street, on or before Saturday, June 14.

PAINTING.

LITTLEPORT.—For painting the timber bridge across the River Ouse, at Littleport. The specification of the work may be inspected on application to Mr. John Ellingham, at the Bridge House Inn, Littleport, or at the office of Mr. R. Reynolds Rowe, Surveyor General of Bridges, &c., in the Isle of Ely, 10 Emmanuel Street, Cambridge. Tenders to be delivered at the office of the Clerk of the Peace, Wisbeach, on or before Tuesday, June 10.

VILLA.

GRESFORD.—For the erection of a villa at Gresford, near Wrexham, in the county of Denbigh. Drawings and specifications at No. 12 Temple Row, Wrexham. Tenders to be delivered on or before Monday, June 16, endorsed "Tender for villa at Gresford," to Mr. Gummow, surveyor, Wrexham.

OFFICERS' QUARTERS.

SANDHURST.—For the erection of additional officers' quarters at the Hospital, Royal Military College, Sandhurst, Berks. Parties desiring to tender for the erection of these works must leave their names at the Royal Engineer Office on or before the 13th day of June, and pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded to each party as soon as prepared by the government surveyor.

STAFF SERJEANTS' QUARTERS.

FLEETWOOD.—For the erection of staff serjeants' quarters, Fleetwood. Parties desiring to tender for the adoption of these works must leave their names at the Royal Engineer Office, 225 Stratford Road, Manchester, on or before the 9th of June, and pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded to each party as soon as prepared by the government surveyor.

BARRACKS.

HOUNSLOW.—For alterations to the west wing of Hounslow Barracks. Parties desiring to tender for this work must leave their names at the Royal Engineer Office, London District, 11 James Street, Buckingham Gate, from 11th to 14th of June, both days inclusive, between the hours of 11 a.m. and 3 p.m., and to pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded to each party as soon as prepared by the government surveyor.

PIER.

FORT VICTORIA, FRESHWATER, ISLE OF WIGHT.—For the erection of a new wooden pier at Fort Victoria, Freshwater, in the Isle of Wight. Parties desiring to tender for this work must leave their names at the Royal Engineer Office, Hill Lodge, Freshwater, on or before the 10th of June.

RAILWAY STATIONS.

DUMFRIESSHIRE.—For the erection of the following stations on the line of the Dumfries, Lochmaben, and Lockerby Junction Railway:—1. A station house, goods' shed, pointsman's box, and other works at Lochmaben. 2. A station house at Shieldhill, in the parish of Tinwald. 3. A station house at Amisfield, in the parish of Tinwald. Plans, specifications, and schedules of measurement may be seen at the office of the Secretary of the Company, English Street, Dumfries, and tenders received till Wednesday, the 18th day of June.

PUBLIC-HOUSE, ETC.

ANCASTER.—Plans and specifications of a public house, stable, and cart-shed, to be erected on ground near the railway station, Ancaster, may be seen at the offices of Kirk and Parry, Sleaford, Lincolnshire. Tenders, addressed to Mr. John Newton, care of Kirk and Parry, Sleaford, to be delivered not later than noon on Monday, June 9.

HOSPITAL.

PATH.—For making alterations in the Bath Mineral Water Hospital. Plans and specifications at the offices of Messrs. Manners and Gill, architects, Bath. Tenders, either for the whole of the work, or for one or more of the separate trades, to be sent to the architects by one o'clock on Monday the 16th of June.

IRONMONGERY, ETC.

BRIGHTON.—For the general and usual supply of ironmongery, bricklayers' and carpenters' materials, and for the performance of plumbers', painters', and glaziers' work required at the Brighton Workhouse, Industrial Schools, and Parochial Offices, for one year, commencing the 25th day of June 1862, and ending the 24th day of June 1863. Tenders to be left at the clerk's office, parochial office, Church Street, Brighton, on or before Tuesday, the 17th of June.

CATHEDRAL.

CORK.—Architects are invited to furnish designs for the erection of the cathedral of St. Finbar, Cork, at a cost not exceeding £15,000. A premium of £100 will be given for the best and most approved plan, and £50 for the second. Plans and designs to be sent to the hon. secretaries, Ven. the Archdeacon of Cork, Rev. J. N. Woodroffe, or T. M. Osborne, Esq., Cork, not later than the 1st of August next. Further information and a plan of the site may be obtained on application to W. C. Bennett, Esq., notary public and Chapter clerk, 15 South Mall, Cork.

LIBRARY AND READING ROOMS.

BIRMINGHAM.—The Free Libraries' Committee of the Council of the Borough require plans, sections, specifications, and estimates for the erection of a free reference library and reading-rooms, lending-library and news-rooms, and gallery of art, upon the piece of

vacant land adjoining the Midland Institute Building, with an elevation uniform with the said building. Intending competitors are requested to send in their plans, specifications and estimates, under cover, to Thomas Standbridge, Town Clerk, Town Clerk's Office, Temple Street, endorsed "Plans for Free Reference Library Buildings," on or before the 16th June. Particulars of the accommodation required, and of the conditions of competition, together with a lithographed plan of the site, may be obtained on application.

MEMORIAL.

GLOUCESTER.—The committee appointed to carry out the Hooper Memorial, at Gloucester, invite sculptors to submit models of designs for the figure of Bishop Hooper, which is intended to be placed under the canopy of the monument just erected in the churchyard of St. Mary de Lode, Gloucester. The models or statues to be carved in stone, and to be one quarter the real height (7 feet). The author of the best design, approved by the committee, will be appointed to execute the full-sized figure, and the sum of ten guineas will be awarded for the second-best design.

WORKHOUSES.

CARLISLE.—The Guardians of the Carlisle Union offer a premium of £50 for the set of plans approved by them and the Poor Law Board, for a new workhouse, capable of accommodating 500 adult inmates, and designed in such a manner as to allow of enlargement, without interfering with the uniformity of the external appearance. The site for the erection of the said workhouse is situated at Fuschill, on the east side of Carlisle. All plans to be sent to the Clerk on or before June 23.

DORRINGTON.—For executing certain additions and alterations proposed to be made at the union workhouse, Dorrington, North Whiteford Union, according to plans and specifications lying for inspection at the workhouse. Tenders to be delivered to the Clerk of the Board, on or before Tuesday, June 10.

HANTS.—For the works required to be done in making certain alterations in, and additions to, the Alverstoke Workhouse. Plans, &c., at the Board-room of the workhouse on and after the 15th May, or at the office of Mr. Thomas Hellyer, Bouvierie House, Ryde, Isle of Wight, architect, of whom every information may be obtained, and bills of quantities may be had.

GAOL AND HOUSE OF CORRECTION.

EXETER.—The Town Council of Exeter are desirous to be informed if the present City Gaol and House of Correction can be made available so as to satisfy the requirements of the law, as to the construction of gaols and houses of correction; and they invite architects to ascertain if it is practicable that the present City Gaol and House of Correction can be so altered. They offer a premium of £30 for the plan of alterations which shall be considered the best, and if such plan be carried into effect, the architect producing it will be employed to superintend the execution of the work at the usual commission, but in that event his premium is to merge in his commission. A premium of £20 will be given for the plan which shall be considered the second best. Plans to be sent in before the second Wednesday in June.

CONTRACTS OPEN.

METROPOLITAN MAIN DRAINAGE.

SOUTHERN OUTFALL WORKS, CROSSNESS.—For the construction of engine-houses, a boiler-house, chimney, filth-hoists, coal-sheds, dwelling-houses, wharf-wall, sewers, and other works in connection therewith, at Crossness, Erith, Kent. Plans, &c., may be obtained at the Metropolitan Board of Works office, Spring Gardens, until 3rd July. Tenders to be sent in on 4th July.

CHAPEL.

USK, MONMOUTHSHIRE.—For the erection of a new chapel and vestries on the site of the present Congregational chapel at Usk, Monmouthshire. Particulars may be obtained of the architects, Messrs. W. G. Habershon and Pite, 38 Bloomsbury Square, London; Park Square, Newport, Monmouth; and Belvedere, Tredegarville, Cardiff.

ROAD-MAKING, ETC.

FINCHLEY.—For making road and drains at Finchley. Plans to be seen at the office of Mr. V. France, Solicitor, 37 New Bridge Street, Blackfriars.

DWELLING HOUSES.

STAFFORD.—For the erection of five houses, at Forebridge, for Mr. John F. Bridgwood, Wolverhampton Road, Stafford. Drawings, &c., with Mr. Henry Ward, architect, Bank Passage, Stafford.

LOCK-UP HOUSE, ETC.

LLANIDLOES.—For the erection of a lock-up house and constable's residence at Llanidloes. Plans and specification to be seen at the office of Mr. J. W. Poundby, County Surveyor, Kerry, Montgomeryshire.

INFANT SCHOOL, ETC.

WARLEY, ESSEX.—For building an infant school and school-mistresses' quarters, at Warley Barracks, Essex. Particulars to be had at the Royal Engineer office, Colchester.

SEWERS.

MAIDSTONE.—For laying in pipe sewers of various sizes, in the district of Perryfields, Maidstone, about 3,500 yards in length, with cesspools, traps, gratings, and other works. Tenders to Messrs. Beale and Hoar, Maidstone, on or before the 10th of June.

WESTMINSTER.—For the execution of general works and repairs to the sewers, gullies, drains, &c., within the Westminster district, under the jurisdiction of the District Board, for the term of one year, commencing from Midsummer-day next. Printed conditions of contract, schedules of prices, and forms of tender, may be obtained at the offices of the Board, Great Smith Street, Westminster, where tenders are to be delivered by, or before, Wednesday, the 11th day of June.

BOGWOOD.

DUBLIN.—The Commissioners of Public Works will receive, up to 12 o'clock, on the 21st June next, tenders for the supply of about 120 tons of Bogwood, to be delivered in such quantities and at such times as may be ordered, up to June 30th, 1863, inclusive, to the various government offices, &c., in the Dublin District.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

Received.—W. H. B. P., W. W., A. Constant Reader, G. R. & Co., H. T., J. M., G. H. C., G. and de P., H. J. Jun., M. & Co., H. and J. D. M., J. L., C. J. A., Architect's Assistant, J. T. W., J. W. B., J. R., C. M. S., W. B., Provincial, E. J., J. V., W. H. B., R. A., Ph. D.

* * NOTICE.—The BUILDING NEWS is now published at 166 Fleet Street, where all Communications and Advertisements should be addressed.

THE GREAT THAMES SEWER.

AMONG the essentials to our existence, next to air, there is nothing at once so necessary, so common, and of so little intrinsic price as water — pure water — yet how difficult it is to get, and what an enormous price is paid for the mixture of water and filth which daily finds its way into our houses! In towns it is usually taken from the nearest river or stream, which is at the same time generally considered to be a convenient deposit for the sewage and refuse of the town. In country houses, where the supply may be from wells, they will, in nine cases out of ten, be found sunk within a few feet, and of course at a lower level than, a farm or stable-yard, or, wanting one of these, near to a cesspool, or ditch, into which the sewage is conveyed, to remain during the summer months, a pestiferous nuisance, and in either case to percolate slowly, but surely, into the well whence water is drawn for domestic purposes. The fact is, we seldom drink pure water, and it is equally a fact that there is no reason whatever why we should not be able to do so at all times. There is no difficulty in getting it; we have it supplied to us bountifully, and far beyond our wants; but we do what we can to pollute and render it totally unfit to serve the purposes for which it is provided. Take London alone — why pure water is unknown here, and has been unknown for many many years. We have built a vast city on the banks of a noble river of pure water, that is more than ample to supply every want, but the drainage of thousands of houses has been constantly poured into it, until it becomes absolutely useless, except for the passage of vessels. Then water was taken from a point higher up the river, where it was supposed to be uncontaminated; by and by, the water there was found no longer good, and other points were selected, and water conveyed thence to the metropolis, after being filtered and conveyed through pipes, at an enormous cost, leading to sad deficiency in the supply to certain poor districts. But in every attempt to take water from the Thames for house use, it seems to have been wilfully forgotten that everywhere along its banks, right up to the source, there are towns and villages which, though in less quantities than London, continue daily to pour into the stream, from which a large metropolitan and suburban district is supplied, volumes of drainage from streets, factories, slaughter-houses, and closets. The deposits from water taken from the highest points, whence it is sent to London, and where, by what would be an amusing fiction, were it less injurious to health, it is supposed to be fit for the purpose, are sickening to a considerable degree.

Nor are the water supplies from sources independent of the Thames unobjectionable, it is impossible for any open conduit on the ground-level, which passes by towns and villages, and is at the same time used for the passage of boats, barges, &c., to escape being fouled.

It is, however, with the Thames that we have now to deal; and, with the main drainage works approaching completion, and the commencement of the Thames embankment, as we hope, drawing near, there could be no more opportune time for the present shameful condition of our river to be fully investigated, and for steps to be taken for its preservation in such a state as will make it what it should and might well be, a blessing and source of health to us, instead of what it has so long been, a generator of disease and death.

We are glad to know that a deputation, fully aware of these facts — indeed who is not? — has waited upon the Home Secretary to represent the urgency of the case, and to ask what the public are certainly entitled to. After the vast expenditure incurred in the construction of the main drainage works, it would seem altogether too bad that, having ceased to convey the sewage of London into the Thames, the water at that portion of the river should still be fouled by the drainage and refuse of the towns and villages above the metropolis; therefore the deputation very properly have asked, that government should issue a commission of enquiry into the condition of the Thames and its tributaries, the immediate district of the metropolis being excepted from such enquiry, as being already under special jurisdiction; to enquire what defects exist, and to report what remedies can be applied to such defects, having regard generally to all purposes by which the river and its branches, or lands adjoining to them, may be improved: the deputation asked that the enquiry should be especially directed to the purification of the Thames waters for the use of the metropolis, and of the towns in the Thames district.

The area of the Thames and its tributaries is estimated to contain 6,000 square miles, yet, as we have before pointed out, no systematic, or indeed any provision at all, has as yet been made either for regulating the several branches of the waters in the Thames basin on a common plan, or for deterring the towns and villages on the several parts of it from casting their sewage into the streams, and many towns, say the deputation in their memorial, we say nearly all, do so cast in the whole or part of their sewage. Besides the sanitary view of the question, there is another which may well be considered at the same time; it is, that the unregulated action of floods inflicts damage on

many lands adjoining the river; but in point of fact this also is part of the former question, for it is an ascertained fact, that the health of the population residing in districts subject to floods, is injuriously affected.

But, unfortunately, our hands are not even now quite so clean in the matter as could be wished. It is quite true that we are not going to continue to drain London into the Thames just at the point where it concerns us as inhabitants of the metropolis not to have a vast tank of fermenting sewage right in our centre; but we propose to do, and on a very extensive scale, that which the proposal for the enquiry contemplates preventing others doing. No doubt the deputation was immediately concerned with the state of the Thames at London in consequence of the practice of the towns higher up the river, rather than with the state of the water at any particular town, and London, no doubt, as being most densely populated deserves prior consideration; but what will be the sanitary condition of the district into which the sewage of this vast area is discharged? We have serious misgivings as to the practical result, and believe that the Thames will, sooner or later, be found to be not the proper receptacle for London sewage.

THE SOCIAL SCIENCE CONGRESS.

IT is with some regret that we find the National Association for the Promotion of Social Science has, at the present, its sixth congress, devoted less consideration to sanitary matters than the importance of the subject demands. There is nothing of more consequence than health, since, without it, other possessions are comparatively valueless. The fourth department, whose province is "public health," has limited its attention chiefly to drainage; while the fifth, "Social Economy," treated of little more than dwellings for the working classes. We do not underrate the importance of either subject, but surely there are many other matters to which the Association might have directed attention. There is another point to which we must revert: we know not with whom it is left to decide what papers should be read, but certainly some discretion should be exercised in selection; and we are led to the remark from a knowledge that, in one instance, at least, a paper was read in which it was the author's sole object to obtain notoriety for a so-called invention, which he has long tried to bring prominently before the public by the aid of the press, and vainly, simply because the plan is utterly worthless, and the inventor a person who is not very particular as to the means he employs to force himself into notice.

Mr. RAWLINGS read an interesting paper on "House Drainage and Sewage," a subject with which he is well acquainted, and took occasion to remind his hearers that even in Belgravia, a flat district, the sewers are full of deposit, and that the trapping of drains is a "complete mockery, a delusion, and a snare;" and were it not for the escape of exhalations from the sewers in the streets, he predicted a fearful and raging epidemic. Not only in Belgravia are matters in this state — bad enough for those who stay but a few months in town — but in poor, close, overcrowded districts, many alleys and courts, where people, pale and wan, live through their lives and never see the green fields, there are no sewers in which deposits can accumulate, no drains to be trapped, but simply a cesspool, often uncovered and as often overflowing. This is the direction in which efforts should be made, at the same time that the exhalations from the Belgravian sewers are shut in, which have been sending some unwary passengers over them to a sick-room, perhaps a death-bed.

Are there no other evils to which a department considering public health might devote some attention, forcing on sluggish vestries and other authorities a conviction of the necessity of a change from the olden customs? How far is the dust of our streets, when raised in clouds by a March wind, or such winds as we have had lately, and blown down our throats, conducive to health? Who looks upon street-watering as anything more than a pleasant idea that he would like to see carried out as regularly as the collection of the rates for it? Then there are our cabs and omnibuses. Is no reform needed there, having regard to public health? How many have suffered for years owing to the difficulty of finding a public convenience? In the matter of building, too, it is most injurious to health to live in damp houses; perhaps on a clay soil, with the floor joist touching the earth, and a mock dry area which serves to keep the basement walls damp rather than dry. Then the walls of half the houses erected by speculative builders are plastered with road mud, or "scrapings" used instead of sand, and full of animal and vegetable matter decaying and decayed. These, and many others that need not be particularised, are matters for which there is no legislation. The only remedy is to be found in publicity in every possible direction, and we trust at the next congress to find that the Association have more fully recognised their importance.

BATTERSEA FIELDS. — ROYAL AGRICULTURAL SOCIETY.

TWENTY years ago it would have been difficult to find, in the immediate neighbourhood of any great city in England, a more desolate and unpromising locality than that known as Battersea Fields. Along the river's bank, from Nine Elms to Battersea Bridge, and extending inland to the Wandsworth Road, lay at that time a marshy, uncultivated, and unprofitable tract of land, unsightly to the eye, and by no means conducive to the health, of the visitor. It was, in fact, the resort of the dangerous classes of the metropolis, who considered it as their own especial recreation ground; and devoted it frequently to unconsecrated and most illegitimate practices. The march of improvement has, however, overtaken and metamorphosed Battersea Fields.

The marsh, erstwhile redolent of malaria and miasma, has given place in one quarter to an admirably arranged park, with ornamental water, shrubberies, and glades, in which the old may find enjoyment, and the young healthy recreation; and in another, to the vast and handsome workshops, carriage manufactories, and stores of the London, Chatham, and Dover Railway Company. A handsome suspension bridge, built by Mr. Page, connects the park with the fashionable and aristocratic Belgravia, thus enabling the denizens of the latter, to extend their drives from Middlesex into Surrey; and a railway bridge, of not inelegant proportions, carries the traffic of the above-named railway, to and from the Great Victoria Station at Piccadilly. These changes, it cannot but be acknowledged, are gratifying and satisfactory in the highest degree. They conduce, without doubt, to the moral as well as the physical good of the inhabitants of the metropolis, as they also add to the beauty of the Mammoth city itself.

Before the erection of Page's Suspension Bridge, the neighbourhood of Battersea Fields was as unexplored, by the inhabitants of the opposite bank of the Thames, as is Salisbury Plain by dwellers in the borough. But now, not only do those classes of persons who are fortunate enough to ride in their own carriages, visit the new found land, but pilgrims of a lower grade wend their way by thousands to view and revel in its charms. There are, indeed, few points within a radius of five miles from the Royal Exchange, from which a better panorama — so to speak — of London, can be obtained, than from that part of the Wandsworth Road, known as Battersea Rise, and which extends to Lavender Hill, next Wandsworth. Far down to the extreme right, as one faces the river, is seen the Tower of London, with its venerable, though blood-stained associations; the Monument, commemorative of the Great Fire; the innumerable city churches pointing to heaven, and with St. Paul's, gigantically and grandly presiding over them. Then, carrying the eye still forward, the towers of the Legislative Palace at Westminster, and those of the ancient Abbey, meet it. The first conveys to the mind a startling idea of the wealth of a country, which has expended already over two millions sterling, in providing sitting-rooms for its legislators, and the second, a conviction of the architectural greatness of a bygone age.

Higher up the river, but yet apparently at no great distance from it, are seen — glistening, it may be, in the sun's rays — the domes of the International Exhibition. We will not say that these are glorious proofs of the genius of their designer, but they are extraordinary specimens of the skill and ability of those who erected them. In the background are visible the heights of Hampstead and Highgate, and, on a clear day, and to the extreme left, the tower of the church of Harrow-on-the-Hill may be discerned.

Let us now descend from the elevated ground from which our bird's-eye view of some of the main features of the architecture of London has been taken, and re-enter the park from which the ascent was made. Battersea Park covers above one hundred acres of ground. In these are to be found accommodation for boaters, bathers, cricketers, and riflemen, and these classes of the community have all been in the habit of employing the advantages afforded them with considerable zest, and it may be trusted with advantage. For a time the last-named body will be obliged to dispense with their practice grounds, for, as our readers are probably aware, the annual exhibition of implements and cattle, promoted by the Royal Agricultural Society, will this year take place in Battersea Park.

The spot chosen for this interesting and very important display is, in fact, the large level space of green sward upon which the various rifle corps entitled to the *entrée* have been accustomed to exercise. This piece of ground has been already enclosed by a hoarding of ten feet in height, and inside this are arranged in twenty straight lines, each of about one thousand feet in length, erections for sheltering the implements of all classes and kinds connected with agriculture which it may be expected will be sent there for exhibition. Of course the sheds are of a temporary character, and their roofs will be of canvas, but the amount of material and labour consumed in their construction is

very great. Mr. Manning, of Holborn, was the contractor for the work, as well as for the erection of a series of more substantial wooden buildings — separated by a temporary bridge from those of which we have spoken — and intended for the protection of the "Live Stock," which will form no inconsiderable part of the Exhibition.

In all, something like thirty acres are covered by the stores and stables of the Agricultural Society, and though these are tenantless at present, they have a novel and singular appearance. On the 23rd inst., and during the following days of the show, we can imagine that the interior of the hoarding will present a scene of bustle and excitement such as neither Battersea Fields of the olden, nor Battersea Park of modern times, has before witnessed. It will be our task probably to report upon the achievements of the Exhibitors at the coming display, although the deposits of agricultural implements in the eastern annex of the International Exhibition are of a nature to lead us to suppose that they can scarcely be excelled at the Park.

We cannot conclude our present observations on this subject, without a few commendatory remarks upon the Royal Agricultural Society. There is no doubt whatever that it has been instrumental in furthering, fostering, and promoting the science and the practice of agriculture in Great Britain and Ireland to a very considerable extent. The working arrangements of the Society have been for the most part excellent, and the experience of each year's exhibition has led to improvement, and the strengthening of weak points in the succeeding one. Last year the annual meeting was held at Leeds, and it proved to be most successful.

Whatever Mr. Sidney Smith and his supporters may say about the Prize System generally, we have no doubt that it has worked well in reference to agricultural implements, to say nothing of cattle. The application of steam-power to field culture may be regarded as a great triumph of the prize system, for without the hope of recompense it was scarcely to be expected that manufacturers would have devoted so much time as they have devoted to the making of experiments in that direction. It is probable that the adaptability of steam to the purpose of the cultivation of the soil will be demonstrated more fully at Battersea than at Leeds; but we scarcely see how actual trials of the Steam Ploughs are to be made there, except at the expense of the ornamentation of the Park. "Smashers-up" and "Scarifiers," though very useful in some places, would be rather out of place among the flower-beds and foot-paths of the people's garden. In all probability, therefore, the meeting will comprise an Exhibition of Implements not in motion, but at rest; and the trials for fixed and portable steam engines, fixed and portable finishing machines, hand-dressing machines, barley-hummellers, &c. &c., will be postponed till next year.

The Royal Agricultural Society of England increases in nominal strength yearly, and thus its means of promoting the interests of all engaged, directly or indirectly, in agricultural pursuits is constantly extending. At present the total number of governors and members of the several classes is 4,719, showing an augmentation to the extent of 96 names since 1861.

THE INTERNATIONAL EXHIBITION.

WOOD-CUTTING MACHINERY.

PROBABLY no department of the Exhibition is more practically important to the building profession than the Western Annex, with its rich stores of machines for working in iron and wood. In these days of fireproof factories and warehouses, iron, indeed, has become as essential an element in the operations of the builder, as stone, brick, or wood, and iron planing, punching, and riveting machinery is as interesting to the architect as to the mechanical engineer. Very few years have elapsed since the whole of the manipulations connected with carpentry and joinery were effected by means of hand labour, and what was vulgarly termed "elbow grease." Now, however, all is changed, and there are very few processes in relation to the two branches of building just named, which are not, or which may not be, effected by the aid of the steam-engine and wood-cutting machines.

To the persevering endeavours, and unflinching ingenuity of a few London firms this advancement in the economy of the builder's shop is principally due; and foremost among these may be named that of Worssam and Co., of King's Road, Chelsea. Their establishment is replete with machinery for the accomplishment of almost every operation of useful and ornamental carpentry and joinery. In the Western Annex, they make a large display, but as it was utterly impossible for them to transfer to that place specimens of all the machines which may be seen at work in their factory, we shall not confine our observations to the contents of their stand in the Exhibition, but speak also of those tools of which drawings only are exhibited at Kensington. One of the most massive appliances of Messrs. Worssam and Co. for dealing with wood, in its primary stages of conversion, is their Patent Timber Frame. This is adapted for sawing round or square logs of any description of timber into boards or planks of any required thickness. The bulk of timber, to be operated upon is brought forward under the saw frame by means of what is termed a *silent feed*. The title serves to dis-

tinguish this part of the apparatus from the *ratchet* feed originally used in sawing frames, and to which it is far superior both as regards quietness and exactness of action. It is the subject in itself of a patent. The patent silent feed consists of a wheel corresponding to the old ratchet wheel, but instead of being indented, or serrated on the rim, it has a V groove turned on its periphery, into which is fitted an eccentric V pall, to which motion is communicated, as in the ratchet system. When moved forward, the V edge of the pall presses against the sides of the groove in the wheel, and by the silent force of friction compels it to move forward, and thus propel the timber. Another V pall working upon a fixed pin is added, and this answers to the "dead catch" of the ratchet feed. It is clear, therefore, that by this arrangement the timber may be advanced at any rate of speed which its hardness, or thickness, renders most desirable.

Another patented improvement in this kind of sawing machine consists in attaching the frame to the crank by means of two connecting rods. One of these passes on either side of the swing frame, and thus compactness, and consequent economy in the cost of foundations are effected. The parts of the contrivance requiring great strength, such as the swing frame connecting rods, crosshead, the jaws of the timber clips, &c. &c., are made of wrought-iron, and thus it is capable of carrying one saw to every inch of its width. Thus the 36-inch frame will work with 36 saws, and the same rule holds good with any other sized machine.

The Double Deal and Planking Frames are constructed after the above plan, with some slight modifications, whilst Portable Deal Frames are made, as their name implies, for ready movement to any place where their services may be needed. The Veneer Saw is of course circular in its form, and the largest, we believe, which has been fitted up by Worssam and Co., is 8 ft. in diameter. This consists of a cast-iron disc, keyed upon a wrought-iron shaft of sufficient strength. The disc is turned perfectly true, and to it are screwed a series of wrought-iron plates, intended to receive the saw segments. These latter are attached by copper screws, and they may be readily removed in case of accident or otherwise. The segments are ground to a thin edge by means of a lap made for the purpose, and which usually accompanies each machine. Below is a traversing carriage for feeding forward the timber.

Circular Saw Benches of every size, and fitted with saws of every pitch of tooth, to meet the varying requirements of the workshop, are to be found in the establishment of the firm in question. Perhaps the self-acting saw-bench is the most generally useful of the series, and there are many points of detail about it which deserve a more extended notice than we are at present able to give them. The rate of speed may be made to vary with the character of the material dealt with, but from 12 ft. to 15 ft. per minute is that at which the feed is usually arranged. One of these benches will cut 2,300 superficial feet of deals in an hour. Thus much of the Sawing Machinery of Worssam and Co.; and now let us notice some of that employed in the performance of ulterior operations. The first appliance of this second series which invites attention, is the Roller Planing Machine. It is intended principally for acting upon floor-boards of soft wood, and these it not only planes, but grooves, tongues, edges, and reduces to uniform thickness, at one operation! The plane-irons are fixed in planed cast-iron drawers, and are easy of removal or adjustment. The pressure of the board while passing over the plane-irons is subdivided by means of a number of small rollers, and these are so effective that the boards require no finishing after leaving the machine. Its productive power is great. The Chain Planing Machine is another contrivance of a cheaper kind than that just referred to, and used for similar purposes. It is more serviceable in the case of thick boards than thin ones, and is less productive. Other modifications there are of wood planing machines, all exhibiting considerable ingenuity, but they cannot here be individualised.

A remarkable machine is that for carving, moulding, and shaping irregular surfaces. This is constructed on the copying principle, and a dummy or feeler is made to move over a pattern, and thus govern the movements of the cutting tools. It is peculiarly adapted to the requirements of cabinet-makers and coach-builders. It is also useful in planing and shaping Gothic work, for builders, cutting housings and string-boards for stairs, and similar purposes. What is termed a Nurling Machine, is another ingenious application of mechanical means for accomplishing ornamental effects. It is principally adapted for making waved or zig-zag mouldings in hard wood, for pianofortes, cabinet-work, &c., or for cutting imitative basket-work for ear-rings. A template or copy plate is used in this instance, and the wood to be moulded is fixed upon a cast-iron rack travelling bed, which vibrates at any required speed under the cutters. The result is an exact imitation of the pattern, of whatever kind it may be.

Mortising Machines of various kinds go to make up the complement of Messrs. Worssam's wood-cutting machinery, and these, as may be imagined, are not dissimilar in principle to the slotting machines of the engineer's shop. A very beautiful contrivance, known as Whine's Dovetailing Machine, is manufactured by the firm whose works are under review, and this is the only one yet invented that is adapted for the finest descriptions of cabinet work. It is of almost too complicated a nature to be described without illustration, but it may be stated in its behalf, that it will finish off dovetails in any kind of wood in less time than would be occupied by an ordinary workman in setting them out. It must not be imagined that we have mentioned more than a moiety of the woodcutting machinery of Messrs. Worssam and Co., for their mechanical ability has been devoted, and successfully devoted, to the erection of machines for performing all the processes in relation to wood-work, known to the carpenter, the cabinet-maker, the coach-builder, and the joiner.

Great in the same department of industrial economy are Powis, James, and Co., of the Victoria Works, Blackfriars Road. This firm exhibit in the Western Annex numerous specimens of their admirable machines for metamorphosing rough timber into all the multifarious forms which our high state of civilisation demands. The useful, ornamental, and architectural shapes into which wood has now been brought in the fittings of our dwelling-houses, appear to have been well considered by Messrs. Powis and James, and nothing in this direction seems to be beyond their power. They have constructed machines of peculiar excellence for sawing, planing, mortising, tenoning, rebating, and carving wood. Their horizontal steam engines for putting the woodcutting machines in motion are well adapted to their purpose, being at once simple and inexpensive.

To railway companies, or wagon builders, it may be particularly interesting to know that Messrs. Powis and Co. have devised a Double Tenoning Machine, whereby both sides or ends of two wagons may be completed in one minute from the time the cutters strike the wood. This is a triumph in the art of automatic woodcutting undoubtedly, and one which those interested will know how to appreciate. The Band-Sawing Machines of this firm are remarkable for their adaptability to a great variety of purposes, and are justly prized by those who employ such contrivances. In fact, it is probable that in this department Powis and James are unrivalled. They have patented a plan for preventing the breaking of the saws, which occurrence was attended with much danger to those who were using them, and at the same time regulating the amount of tension necessary for their exact action. This contrivance ensures steadiness and regularity in working, because it acts mechanically and with certainty. As the saw heats and expands, what may be termed the "slack" is taken up, and as it cools its contraction is accommodated.

Other machines and other manufactures in this branch of mechanical art must await another opportunity for a visit to the Western Annex. The subject of woodcutting machines, is one of so much consequence to our readers, that we feel assured they will thank us for directing their attention expressly to it.

THE CHEMISTRY OF BUILDING MATERIALS IN OUR INTERNATIONAL EXHIBITION.

OUR readers must not suppose that it is our intention to devote a page of this journal to technical chemistry, or enter into the details of any delicate analyses performed by our savans. Yet we would call their attention to this most important branch of the science, and ask for a more careful consideration than has hitherto been bestowed upon it in its relation to the requirements of the building profession generally, and the development of that progress which alone is the indication of the presence of that healthful energy our age demands from every profession as its share towards the universal standard, *Excelsior*. In some of the discussions of our various Architectural Societies, we have been surprised at the ignorance tacitly displayed of the first laws of this beautiful science by the credence given to many statements put before the public by ignorant charlatans.

How many aids of a most valuable character might be rendered available to those who should be in a better position than any others to judge of the adequacy of the auxiliary to meet their requirements? Why should the architect be at sea with regard to the quality of a stone or the part of a quarry from which to choose his blocks? or why should an amorphous stone be only discovered to be amorphous when it has deteriorated one of our finest edifices, and become the bugbear of the nation? Why should our builder be at the mercy of his merchants who supply materials *en gros*, without knowing or caring for the circumstances under which they are to be used? Why should the artisan not know the peculiar qualities of the bricks, limes, and cements that pass under his hands, and the best treatment of them, to secure their durability and perfect fitness for the position they are to occupy? We are fully aware that the several branches of the profession have their men of careful and attentive research, but we opine that if many more were to make a careful study of not only this, but of all other branches of science that bear directly or indirectly upon their profession, we should see most satisfactory, not to say startling, results arising therefrom.

Perhaps none have had more to do with the product from which so many brilliant results have been obtained to adorn our Class 2 in the International Exhibition than our readers themselves, and whilst viewing the Magenta or Acetate of Rosaline crowns, must often be reminded of that gorgeous film of surpassing beauty in its rainbow radiance that indicated the presence of tar upon the surface of water in the bucket or the stream. Many are the utilitarian results builders have secured from the use of tar, but a pleasing degree of astonishment, we think, will follow an examination of Mr. Perkin's and Messrs. Maule and Nicholson's cases. The alum in the trophy will recall the progress in the manufacture of cements from gypsum, this having been the first material used to harden the so-called plaster of Paris, the Borax Serpent will show the next step, that being one of the constituents of the Parian; and still further progress has provided sulphate of potash instead of sulphate of alumina (alum) in the cement so well known as Martin's cement, the greater insolubility of the latter salt producing the results that appear in its favour. Aluminium, the highly esteemed substitute for silver, shown by Bell and Co., reminds us of billions of tons that pass through the hands of the builder of the silicate of that base (clay), and its combination in the form of the oxide (alumina) with so many of the substances with which he is called upon to deal. A series of most useful products are exhibited by Bartlett Brothers, of Camden Town, consisting of this alumina and its

applications in combination with silica; and, before going further, we would name three substances which will familiarise our readers with the character of the materials in question, and their extreme hardness and durability. Jasper is silica, ruby is alumina, and garnet (as also corundum) is silicate of alumina. Knowing the extreme hardness of the first of these, every effort has been made to apply it to utilitarian purposes. Chemists succeeded in dissolving it, and cried "Eureka," but experiment soon showed that to be but a partial success. Then others tried by neutralising the solvent (an alkali) to secure the silica in its crystalline form, but all failed from the breaking up of the silica when so precipitated into a powdery mass; then calcium in solution, producing lime and combining with the silica, was tried, still with the same powdery result. It is, however, pleasing and satisfactory to find that silica has at last found a mate, and has been wedded by the before-mentioned firm to alumina, the second of our hard friends, and the offspring is the silicate of alumina, our third. This has been effected by using the same solvent for both substances, and as the one is the reagent or decomposer of the other, an union of the most permanent character takes place in so slow and controllable a manner that we think the two great objects are fully attained,—that of time for manipulation, and a crystalline production, as may be seen from the samples exhibited. The application of this invention to the preservation of stone, and the recombining of waste stone, are the principal objects to which the proprietors have applied their discovery.

But we must not pass the silicates of soda and potash without giving a few hints that may be found exceedingly useful to our readers. Portland and Roman cement having silica, lime, or alumina, or the whole in combination, for their base, are materially aided in strength and duration by the addition of a small quantity of the silicates; and the reason is thus explained—silica has a great affinity for its own substance, and greedily appropriates it when presented in certain forms, and the condition securing the greatest degree of affinity is the soluble one; and this appropriation not only serves to concrete the particles of silica, but also the alumina, lime, or any other substances of which the cement may be composed, for they are dependent for their concretion, and highly so for their durability, upon the affinity they have in themselves for silica, which is presented to them as a silicate of an alkali in the best possible guise. In the decoration of buildings everything remains to be done with the silicates. Stereochromy proper should stand externally; and our celebrated painter, Maclise, having so well succeeded with his last painting in our Westminster Palace, surely is an encouragement to our architects and builders to try, by judicious tests, how far this art may be rendered available; and, whilst on the subject of colours, we may remark that this class contains some of the finest in the whole Exhibition—indeed the artists' colourmen have a most gorgeous display. Varnishes are here also well represented, and we are not surprised to learn from the French themselves that the last coats of all fine work are in varnish of London manufacture. To those who are fond of crystals and crystalline forms, a great treat is given in the crystals of soda, sugar of lead, bichromate of potash, red and yellow prussiates of potash, and others of more delicate form and even yet greater beauty. Fine masses are also displayed of the sulphate of iron and copper. The latter, we would remark, is largely used by our continental friends for the induration of wood, by cutting off the tops of their trees and providing a receptacle for the solution of sulphate of copper, so arranged that as the sap descends from the trees the sulphate may take its place. By this ingenious method the whole mass may be most effectually impregnated and preserved. Space, however, warns us that we must recommend the class to the close attention of those of our readers who visit this Great Exposition, and who, we are sure, will appreciate the great taste and care so evidently displayed by Mr. Charles Quin, the superintendent of the class, and his active and energetic assistants.

INTERNATIONAL EXHIBITION.

NOVELTIES FROM COAL, IN GAS AND LIGHT.

(Concluded from our last.)

THE comparatively obscure man to whom the world is indebted, through his inventions, for the development of coal gas-making, is the late Mr. Samuel Clegg—styled the father of gas-lighting. This engineer first purified gas by lime of sulphuretted hydrogen and carbonic acid. Coal-gas then became suitable for use inside the dwellings of both the rich and the poor. The principal part of the present system of making gas continues as first introduced by the inventor; for instance, the hydraulic mains adapted for isolating the pipes conveying the gas as it is made from the retorts. Mr. Clegg also invented the governor, whereby gas can be forced through the street pipes to the burners in a regulated manner, and one of the most important of his inventions is the gas-metre, modifications of which are now in universal use. Mr. Clegg died about two years since in poverty, leaving his wife in want. Before it is too late, the governments of this and foreign countries should befriend such a man's widow. Several appeals have been made to the public; the effect produced may be gleaned from the following extract from a letter which appears in the last number of the *Journal of Gas Lighting*, headed "A national reproach:"—

"It is lamentable," says the writer, "that genius is so often neglected and discarded during the life of the individual; but this is sometimes atoned for after death, by the appreciation of departed talent. To the late Samuel Clegg is due the honour of establishing gas-lighting; but for him it probably would have been retarded many years, and but for him only a small

quantity of the enormous capital now invested profitably therein would have been employed. It is to be regretted that the laudable example of the *Journal of Gas Lighting* to obtain a competency for the widow of the late S. Clegg, should have met with such slight success; for, on reference to the list of subscriptions, I find that out of upwards of one thousand gas companies, established in the United Kingdom, only thirty-four have given anything, and of the thousands and tens of thousands directly or indirectly employed in gas lighting, only seventy-seven have contributed to the aid of the man who combated all the early difficulties," &c.

We now return to Mr. S. Clegg's last invention, as exhibited by Messrs. Bischoff & Co., Class 31, B No. 6,283. It is an improvement on the wet meter, insuring correct registration independent of a variation of the water level, whether caused by evaporation or wilful abstraction. The principle consists in floating the drum by an air vessel, which permits the revolving drum to rise or fall according to the height of water in the case, and to work free from friction on the bearings.

Class 31, B, also contains glass globular lamps for street pillars and brackets. This description of street lamp has been long in use at Oswestry. The difference between it and the common kind is, the glass of the lamp is blown into the desired shape in one piece, thus dispensing with the ordinary framework at the corners, which intercepts some of the rays of light.

Adjoining, there is a standard gazalier for eighty lights, mediæval in character, for a cathedral, by Johnston Brothers. This has a striking appearance from the profuse number of red and white crystal globules, faceted, which are inlaid into the brightly burnished brass. Then Mr. J. W. Singer's stall, close by, contains numerous Gothic designs of gas fittings, suitable for such buildings as the Houses of Parliament. It is impossible to overlook Messrs. Hart and Son, particularly their crystal drops inlaid, unfaceted, into the brass. This is the manner in which the ancients constructed similar work. The glass is allowed to run in drops when taken out of the glass-house pot, whereby the appearance of rock crystal is produced. There is a sun burner with twenty-six lights exhibited by Mr. Wm. Strode. It is to be regretted that this mode of lighting rooms at night is not more generally adopted. The large amount of carbonic acid produced by the combustion of gas by chandelier and bracket lights is considerable; generally no arrangement is made for removing this injurious gas from rooms. Part of the apparatus of the sun burner carries off all its baneful effects. A few paces away can be seen Young's patent Argand burner. The one on view has eighty holes, and is 3 in. diameter. It is stated to give the light of seventy candles, when burning 20 cubic ft. per hour, at the cost of one penny, at 4s. per 1,000.

The pressure and supply of gas to the Exhibition Building is governed by the regulating valves of Messrs. C. Walker and Sons' make. Their manufactures are to be seen at Class 19. Their stall contains the ordinary rack and pinion gas valves, in order to illustrate more clearly their improved protective screw and index valve.

In the Australian department can be noticed Purchas's patent railway gas tender. This is a travelling gasholder, the size being about 20 ft. long by 7 ft. wide. It will contain sufficient coal gas for supplying twenty-two burners, all being lighted for six consecutive hours; the light given by each burner equalling two ordinary railway lamps. The saving effected is estimated at 30 per cent. between difference of cost of gas and oil. A further advantage is derived through there being less wear and tear of lamps, with little comparative cleaning required.

One of the wonders of the Western Annexe is "Holmes's Magneto-electric Machine and Light Regulator." This extraordinary light was first produced and exhibited by Mr. Holmes in Paris seven years since. The light is created in the following manner:—A revolving wheel has inside its tire sixty coils of copper wire; the current is produced by pieces of soft iron passing between the poles of twenty-two sets of magnets placed round in a circle. All the poles point radially inwards, and pieces of soft iron are fixed in the hollow rim of the revolving wheel, every rotation of which passes between forty-four poles, and as these poles are alternately north and south, the current that is induced in the copper wire surrounding the soft iron changes its direction forty-four times in one revolution; but by means of a commutation, this current is again changed, so that it passes out of the machine always in one direction; therefore, one wire is always negative and the other positive. The light produced is intense—sufficient it is stated, in a revolving lens giving off six rays, to enable any person with average sight to read at ten miles' distance. The great objection hitherto to the introduction of this light for sea purposes is its being always liable to go out, through one of the cardinal points, a carbon wick, continually wearing away. Mr. Holmes has invented a regulator to correct this defect. This remarkable light was two years in use at the South Foreland lighthouse, and is now fitted up by the Trinity Board at Dungeness.

Amongst the gas-making novelties, the patent retort bed in open court, Class 1, No. 387, must not be omitted. It seems to possess several advantages over the ordinary mode: for instance, a setting of six retorts can be altered when working down into a three or two bed, the retorts not required being allowed to cool. The furnace to this patent setting is fed with heated air, &c. People interested in gas companies would find this very deserving of a few minutes' inspection. Mr. J. Reid, Class 31, exhibits a gas saturator. This has been tried before, the object being to correct the tendency of gas to absorb the water in the meter-case by passing the dry gas, previously to its entering the meter, through different channels in a separate vessel nearly filled with water.

GEORGE WILCOTT, C.E.

LABOURERS' COTTAGES, AND THEIR BEARING UPON ARCHITECTURE.*

(Continued from our last.)

NOW the actual amount of accommodation for the labourer is soon settled. He wants a living-room, a kitchen, and a pantry on the ground-floor, and three bed-rooms above, with outhouse for wood, coals, office, &c.; or, to describe the ground-plan, as it is mostly and bestly used—a kitchen, which is also the living-room and the largest room in the house, and a washhouse, which serves as a back kitchen in the summer, and which, if we were speaking of a large house, we should call the scullery. There is the pantry besides, and, if possible, a closet under the stairs. This is the ground-plan required.

The point to be kept in mind in distributing the rooms of a cottage is, that the labourer can only afford one fire at a time; and, therefore, I should not hesitate to put his cooking-range—which it is of the gravest import should be a real kitchen range, with boiler on one side the fire and oven on the other—into the largest and best room—the living-room of the house—the room in which the family sit down to their meals, and around the hearth of which they gather in the winter evening. In common speech this, in the midland counties, is called, *par excellence*, “the house,” and this is the real home of comfort. In order to make this to be so used, the back kitchen, scullery, or washhouse (call it which you will), should be of such small dimensions as to preclude its use as a general cooking or sitting-room; for, wherever it is large enough to be so used, it will invariably be occupied to the desertion of the other room, which will then be preserved in its musty finery, and damp unaired atmosphere, for dress occasions only of fair or festival, or Sunday company.

There is a wretched fashion which pervades all classes of English people—intensifying as it descends in the social scale—of reserving the best and largest room in the house as the one to be least used, and seldomest enjoyed. I know of nothing more forlorn and dismal than to be shown into the finely-furnished, stagnant, unwholesome drawing-room, where you feel in an instant that no foot has trodden since the servant came to open the shutters—not the windows—in the morning. The unpleasant sensation of being shown into a company-room is as bad as being received with company manners; and, common though the practice be, there is something about it altogether dissonant to the English notions of Comfort and Home. My rule would not apply to the great show-houses, where there are really state apartments too large for general occupation; but in all houses below that class, I would say, “use your largest and best room ordinarily for the benefit of your family and your everyday friends,” eschew the dull magnificence of a company-room. Never mind if your furniture gets a little rubbed; chairs were made to be sat on, carpets to be walked on, not to be looked at. But you are afraid of the children breaking your glass-shades, and sweeping off the table your nervous doyleys? Then do away with them altogether; and if the ornaments, placed under the one or on the other, go away along with them, there is no great loss. A single glazed cabinet may hold all your things really precious, and if the rest of the decoration of the room be such as will bear ordinary stowage and knockage, it will be introducing a far more manly and wholesome style of ornament than the wretched ormolu and papier maché frippery which now too commonly crowds the tables and mantelpieces of our drawing-rooms—especially of new-married people. Or, if the result should be that the children of the rising generation be brought into better order, and made to respect the amenities and decencies of drawing-room life, it will be no private or public disadvantage, and perhaps will be useful in modifying the somewhat rampant characteristics of the young England of the present day.

I may seem to be travelling away from my cottage subject; but if I can get hold of principles of general application to all classes, it will have greater weight on any particular case, and I shall not be laying down a law for the cottage which I would not carry out in the mansion.

My object, then, is not to allow of a company-room in my model labourer's home; for it necessarily entails a sloppy, untidy, comfortless, everyday existence in the washhouse or scullery; but if you make this latter room so small that it cannot accommodate the family at their meals, if you put the kitchen-range in the best room, have only a small hearth in the scullery, with boiler and sink, then you make this back-room what it should be, the place for washing, slopping, and “doing,” as they say, “their jobs in,” and you force the family to live ordinarily in the largest and wholesomest room, which necessitates certain more comely observances of civilised life, and helps to elevate the whole household in their social relations. The really tidy, good housewife, the good mother who takes pride in the cleanliness of her pets as well as of her pots, and likes to see her family in substantial comfort around her, will prefer this arrangement, though it implies a little more method, and entails a little more labour, to keep all things in their places in a room constantly occupied.

It is the slattern who, in her room or her dress, for the sake of Sunday's finery, is content to go all the week in dirt and discomfort. In a plan on the wall, it is proposed to carry out the idea by making the living-room, in front, 14 ft. by 12 ft., with the scullery 12 ft. by 8 ft. (by the projection of copper, sink, &c., reducing it almost to a square of 8 ft.), and the pantry, which is full large, 7 ft. by 6 ft.; but the coal or wood house might also, possibly with advantage, be combined, and so the expense of these as outhouses be saved.

The reason of the scullery and pantry being drawn even as large as they

are here is, that with a less ground area you cannot obtain the three bedrooms above, which are now rightly considered indispensable for a good cottage. That the parents, the boys, and the girls should each have a separate bedroom, is now deemed imperative in all well-ordered cottages; and I would not say a word against such a requirement; but I do think that the evils of crowded bedrooms have, as affects the morals of the poor, been exaggerated by those who look from what the Quarterly Reviewer calls “a dressing-room point of view.” It is rather on the score of health than of morals, that I would ask for the area of three bedrooms; and I believe that where the parents' chamber is between that of the boys and girls, a curtain may be often as serviceable as a thin wall partition. Certain it is, that both thoughts and habits of decency can accommodate themselves much more to ill-arranged sleeping rooms, than those who are accustomed to the absolute privacy of bedrooms are wont to admit; and the pure and chaste morals of the lower Irish in their huddling bedroom arrangements are a remarkable testimony to this fact. But admitting the necessity of three bedrooms, the great crux of cottage building has been to get them of sufficient size over the ground area required for the living-room, scullery, and pantry. In trying to accommodate the one story to the other, either the bedrooms have been cramped to a most inconvenient and unhealthy size, or the scullery has been enlarged, so as to make it become the general living-room, at a waste of space and money.

A plan before you, I think, takes a middle course, making the three bedrooms respectively 12 ft. by 9 ft.; 12 ft. by 9 ft. 3 in. in the widest part; and 11 ft. 2 in. by 8 ft. 2 in., with a corner taken off for the stairs. The two larger have fire-places, and there is a separate entrance to each. I will then set down the accommodation required for the married agricultural labourer as consisting, on the ground-floor, of: 1. Dining-room or kitchen in one; with range containing oven and boiler, pot-hooks, cupboard, light convenient for cooking, that is, on the side not facing the fire-place. Superficial area not less than 168 ft. 2. Scullery with sink, copper, small hearth, fire-place with outer door communicating with back yard, and another door communicating with passage, or, better, with living-room. Superficial area 96 ft. 3. Pantry, with shelves and room for beer cask, window opening into the outer air, and in communication with passage or scullery. The three bedrooms, respectively, two about 108 ft. and one 90 ft. In round numbers, an area of about 300 ft. on each floor. The height of the lower rooms 8 ft.; of the bedrooms the same, or 5 or 6 ft. on the walls, with the roof taken in.

The best arrangement of this number of rooms is that which allows of an outer porch, with inner lobby or passage, giving independent access to stairs, kitchen, pantry and scullery, with landing upstairs admitting separate entrance to each of the three bedrooms.

It may be doubted whether this arrangement of separate entrance, deemed so indispensable in a middle-class house, should be regarded as necessary in a cottage. It is certain that the labourers do not themselves care so much about it, and seldom complain of the door opening direct upon the living-room—of the stairs going out of the living-room or the scullery—or of the bedrooms opening one into another; but when we are seeking a model plan, it is as well to get as perfect an arrangement as we can, and one which will help to foster habits of order, and akin to what has, from its convenience, been sanctioned by classes higher in the social scale.

What the poor do complain of—and too often with reason—is in the new cottages which have been provided for them, is the thinness of the walls, the cold draughts, and the smoky chimneys. I will go, therefore, into some details on these heads, saying a few words first upon the site.

I need not speak of the soil, because we must take that as we find it. Of course, we should prefer dry, gravelly ground, where we can procure it, as much for the cottage as the hall. We should regard, also, how the ground lies for drainage, and for a supply of water. But one rule of aspect, applying to the cottage, is directly the opposite to that of the mansion. In the great house we want the south for flower-garden and private use, and so contrive the public entrance anywhere but there; but in a cottage, which can afford but one front, we should always, if possible, get this to the south—the door opening to the south, and the window of the living-room having the same aspect, looking upon the little garden of herbs and flowers, with the wicket upon the road, about six or eight yards off. The increased cheerfulness and comfort of a cottage so placed can hardly be overrated. There is no single drawback, that I know of, to this arrangement. It throws the sunny side of life into the living-room, gives the south wall for the vine or the apricot, and the flowers; and throws the hot washing work, and the little larder, to the northern or cool aspect.

The foundations of the walls should be deep enough to admit of the joists of the boarded floor—which I should like that of the living-room to be—being laid with eight inches, at least, hollow beneath, and with air-bricks in the basement course. Above all, immediately below the floor-level, the whole of the walls should have a layer of slate, laid in cement, or of asphalt, so as to prevent the damp rising. This, which indeed should never be omitted in any building, is most imperative in a cottage, where the presence of damp is too often the evil spirit that paralyses the strength and support of the whole family; and yet, though the cost is scarcely appreciable, there is no preventive oftener neglected than this.

Equally fatal to the comfort, health, and whole economy of the cottage, are the thin walls always used by speculative builders, and too often by those, also, whose aim is the increased happiness of their poorer neighbours. No common 9-inch wall, in an exposed situation, will keep out damp and cold; but hollow bricks of that thickness, or the same amount of bricks used hollow, and making eleven inches of wall, will suffice. I have drawings here, showing how bricks may be so used; but the difficulty of

* Paper read by the Rev. Canon JAMES, at the Architectural Museum, South Kensington.

getting common bricklayers so to use them is, I know, excessive; and, from their inaptness to this kind of construction, a most disproportionate expense is added to the estimate. If we could once get our bricklayers out of the groove of the common solid 9-inch and 14-inch work, the extra material or labour required for 9-inch, 11-inch, or 12-inch hollow walling would achieve a most important advantage, at a comparatively small cost. Contrary to what is usually recommended, I should plaster the living-room and the bedrooms within; and if I could only get 9-inch solid walling, I should paint it on the outside, as an effective repeller of the damp.

Where stone can be procured as cheap as brick, it should be used, as necessitating a substantial thickness of wall; but I am convinced that, where it is the custom of the country, there is nothing so effective for cottages as mud walls. In the midland counties, I am sorry to say, they are disappearing; but there are many parts in the south and west where the old method is kept up, with some improvements introduced. But the art of building these walls is so local, and so dependent on the material at hand, that, though I could wish, for the sake of their warmth, to see them generally extended, I can hardly hope it. But some method of "post and pan," or of concrete, using the common soil for the main substance of the wall (as, I believe, is common in Eastern countries), might surely, if attention were given to the matter, be made available, as the cheapest walling for any locality.

(To be concluded in our next.)

ARCHITECTURAL ASSOCIATION.—MR. R. P. SPIERS ON ARCHITECTURE IN NORMANDY.

(Concluded from our last.)

CAEN is the most interesting town for the searchers after the finest specimens of Norman architecture, possessing as it does the two largest churches founded by William the Conqueror and Queen Matilda. The first of these, l'Abbaye aux Hommes, known by the name of St. Etroum (St. Stephen), has the form of a Latin cross. The side aisles are carried round the choir, where there are chapels annexed. The nave and transept were consecrated in 1077; the choir is later, and has circular arches crossing one another, thus forming pointed arches. The whole of the nave is rib-vaulted with circular arches. The towers, which are of the eleventh century, had spires added to them in the thirteenth or fourteenth century, at which period there was a further addition made to the building of four towers and spires at the east end. The central tower is of the fourteenth century, and suffered much from the cannon balls of the English during a siege. L'Abbaye aux Dames, Holy Trinity, though inferior in size and proportions to the last-named building, yet has more genuine Norman parts about it, and has been also added to, than St. Stephen's. The choir, which is very fine, is circular, decorated with a double row of circular-headed arched springs, the arches being supported by detached columns. The central tower is of the thirteenth century, with a fifteenth century balustrade. The western towers, which are undergoing restoration, have a renaissance coping of the seventeenth century, which M. Ruppreck Robert, the architect, proposes to remove and replace with coping balustrade and spires similar to those of the Abbaye aux Hommes. St. Pierre, the church of next importance at Caen, is of various epochs. It possesses the most elegant spire in France, of the fourteenth century (dating from 1308, and being 200 feet in height), and the richest choir of the sixteenth century. The nave and side aisles are of the fifteenth century, and there is a beautiful western façade of the fourteenth century. The oldest church in Caen is that of St. Nicholas, the most ancient part of which is extremely simple, having no ornament or decoration whatever. The chancel is covered with a conical roof in stone, and which is of later date than the chancel itself. The tower, which is of the fifteenth century, is an elegant structure. This church is no longer used for religious services. The church of St. Etienne Leveux, near l'Abbaye aux Hommes, is nearly in ruins, but is frequently visited by English architects, the structure having some beautiful carving of the fifteenth century. The church of St. Leneveu has a fine tower of the thirteenth century, resembling that of St. Pierre. The two chancels, one of the fifteenth and the other of the sixteenth century, are interesting objects, and, standing boldly out in the principal street of Caen, form a pleasing picture, often sketched by artist-tourists. St. Jean has a tower which inclines slightly, like the tower at Pisa; the church has been built on to it whilst in its leaning position, and the effect in the interior is very curious. There are three or four other churches in this neighbourhood well worthy of a visit, especially that of Vancelles, which has a fine though small Norman tower, and a lofty fourteenth century choir. The Manoir des Gendarmes is a structure which is perhaps more frequently visited than any other building at Caen. It has two towers, connected by a long wall with battlements, and is of the sixteenth century. There is a series of medallions with heads sculptured on the battlements, and are supposed to be portraits of persons existing at the time of their erection. The Hotel de Ville was built in 1537. Caen is a very clean town, though it has but few flagstone pavements, and it can boast of meadows and promenades similar to those at Christ Church, Oxford. It contains a large château, with fortifications and a dry moat. The lecturer proceeded to state that from Caen he made another excursion, visiting some of the villages he had missed in his tour from Bayeux, and others which lay more to the north-east. The choir of St. Contest, which is vaulted, is Norman, but some of the arches being pointed indicate the transition epoch. The tower is of the twelfth century, and the nave of the thirteenth. Lasson has a very pretty example of a

private château of the sixteenth century, the wall being decorated with delicate pilasters. The mouldings are rich and elegant; there is a strong corbelling, carrying a frieze ornamented with cartouches and medallions, and above it a parapet. The château possesses the circular-headed window and large chimneys which denote the time of Francis I., sixteenth century. In a billiard-room on the first floor is an exceedingly rich wood-panelled ceiling, coloured and gilded, resembling those of the ducal palace of Venice, and supposed to be the work of an Italian architect. The church is nearly all modern. Thaon has two churches—one new, and having nothing remarkable about it; and the other, which is falling to ruins, has been a very fine and beautiful structure. The latter is composed of a central nave, lofty choir, and tower. The tower has two stories, and is pierced on each face with a circular arch and two openings. There were originally side aisles, which have been suppressed, and the nave arches are blocked up. The walls are decorated with a series of blank arcades, and a flat Norman ornament. The church of Fontaine Henry has a very beautiful Norman choir, and the nave is modern. The château, which attracts most of the visitors, is an interesting structure, of many epochs; its decorations comprise the most beautiful and delicate work. The chapel belongs to the close of the thirteenth century. The walls are decorated in the interior with a series of arcades, carried by small columns; and between each is a seat, hollowed out in the stone. In the sixteenth century the nave was vaulted with low segmental arches, carried by columns, descending into the nave. There are three elegant windows pierced in the chancel. Colombiers has a well-preserved tower of the twelfth century, pierced with circular-headed windows, which are very elongated, like those of the thirteenth century. The church of Ver has two very distinct parts—the choir and tower, of the twelfth century, and the nave of the thirteenth. The old Norman door, on the west, still remains. Above the southern door is a bas relief of "St. Merthin Cutting his Cloak." A similar bas relief occurs in two or three other churches, and they are of the sixteenth century. Cousseulles is famed for its oysters, which are of a very large size, three or four being sufficient for a meal; and yet they only cost, at that place, from three halfpence to two-pence a dozen. Bernières is one of the most important churches of the arrondissement of Caen, having an elegant and lofty tower, of the thirteenth century, and in front of which is a very beautiful porch. The tower is 200 feet high, and is the loftiest tower attached to any rural church in Normandy. The third, fourth, fifth, and sixth arches of the nave are Norman; the first and second seem to have had their columns replaced, or else they were added at the end of the twelfth century. The whole is vaulted, the first and third divisions pointed, and the others circular. The choir is of the fourteenth century. Langmum possesses a very pretty cruciform church and tower. Here, again, there is a difference in the style of the divisions of the nave; the first three arches are circular-headed Norman, the five following pointed, and they are carried by huge cylindrical columns. The lower part of the tower is of the thirteenth century, and the upper part of the fourteenth. At Lion is a picturesque château, of the sixteenth century. Hermanville has a pretty tower of the twelfth century—nearly the only one which has neither spire nor visible roof. The nave of the church dates probably from the first half of the eleventh century. Onisticheron has a central tower, and very lofty choir, with an imposing façade of four stories. From Caen, on my return home (continued the lecturer), I visited Lisieux and Evreux. The first of those towns has a very fine church, that of St. Pierre. It has two towers on the western façade; and though built about the same time, their construction is very different—one being Gothic, and the other Romanesque, but both being on a Gothic base. The nave, transept, and side aisles are of the same date as the façade—the latter end of the thirteenth century. The choir, which is a very fine one, and central tower are of the fourteenth century. There are several finely-carved wooden houses in the town, of the fifteenth and sixteenth centuries. The Cathedral of Evreux dates from different periods—the most ancient portion being the lower part of the nave, which is of the eleventh century. The transepts and choir are of the fifteenth century, and the towers of the façade of the sixteenth or seventeenth. The eastern end of the church is very fine, both in the interior and exterior. There is much beautiful carved woodwork in the screen which separates the chancel and its side aisles and chapels from the church. The Town des Anglais is an isolated town of the fifteenth century; but it has a church, that of St. Taurin, which is interesting, owing to the different dates of its construction. Some of the arches of the nave are circular, and of the eleventh century, while others are pointed, and of the fourteenth century. There are some remains of Norman arches in the south transept. The Bishop's Palace is an interesting structure, of the fifteenth century; but (said the lecturer, in conclusion), as winter was setting in, he was prevented from visiting it, as well as other parts of the town, and set off for Paris.

FOREIGN ARCHITECTURAL DRAWINGS IN THE INTER- NATIONAL EXHIBITION.

THE International Exhibition of 1851 was almost exclusively an Industrial display. Two out of the three higher branches of art were unrepresented there. It afforded us no opportunity to compare the powers of English architects or of English painters with those of foreign artists; and our sculptors were favoured more, perhaps, because their works were peculiarly suited to the embellishment of the building, than from any desire of testing their ability. We can hardly think, from the specimen which the Commissioners of 1862 have given us in the building itself, that they have any particular love for, or taste in, architectural matters; but as wall-space had to be

provided for pictures, the claims of architecture could not be repudiated. We have consequently abundant evidence in the building that the "huge shed" is not a representative type of modern English architecture, and that Captain Fowke is not in the first rank of British architects. Every cloud, it is said, has a silver lining. If the South-Kensington building is a mere brick-stack, a "bleared visage," which "rather threateneth than doth promise aught," we have only to enter the architectural galleries in order to forget it. The display on the English side is really a noble one. The same independent study which characterises our paintings, is seen also in our architectural designs. Extreme liberty of thought, and almost contemptuous disregard of the teaching of any particular school, gives a peculiar interest to them. We see here no army of architects working according to a professor's instructions, or looking at precedent through an uniformly tinted glass; we recognise no common drill to which all have at some time or other submitted; but the labours of men who read the great lessons of art, and interpret them each after his own fashion, and who march without keeping step with each other, but still unfettered — to their object. Hence what we lose in mass we gain in variety. There is less evidence of facility, but more of force; less harmony, but more picturesqueness. If we occasionally show works which no foreign architect with his course of education could produce, we, at times, scale heights which they cannot climb, and pass them at a bound when they are putting forth their full strength. At Hamburg we surprised, and at Lisle we astonished them. Wherever we have met them we have proved ourselves worthy rivals. And yet, there is no blinking the fact that, as a body, we are not half-educated in comparison with foreign architects. In proof of this we would ask simply upon how many of us has the study of figure-drawing been enforced? There are few of us who can sufficiently delineate that portion of the ornament in our buildings wherein figures are introduced. We fall back too often upon professional architectural sculptors, and leave them to elaborate our general conceptions. Our designs occasionally, by their deficiency in this respect, and their eccentricity in others, provoke a smile from the more accomplished foreigners. Their designs never affect us in that way. They may be tame and weak, but they are never simply contemptible. They have always some trace of the skilful hand and of the cultivated mind. If foreign architects follow too frequently, to suit our insular notions, a beaten track, the groove they run in has been dexterously cut, and they do not start upon their course before they have manifested a certain degree of capacity for it. The strict examination which all of them undergo, and their training for it, shapes no doubt their after development. Our exemption from it produces that unbridled diversity seen in all our public and private buildings.

The difference of our respective governments, and the different objects with which public buildings are erected, here and abroad, tend still further to alter the character of our architecture. No better evidence can be given of the influence, for good or for ill, which a government or a monarch has upon art, than a reference to the modern buildings of Munich. They have been chiefly erected by Von Klenze, one of the ablest of living architects. When he worked under the inspiration of the ex-king, he produced something worse than feeble copies of great originals. His version of the Loggia di Lanzi and of the Pitti Palace at Florence, is about on a par with the comical reproduction of the Choragic Monument of Lysicrates on the Regent Street Chapel, or of the employment of the Jupiter Stator columns on a London shop front. The "Art Monarch" threw the same dark shadow upon painting as he did upon architecture. Artists could not show their heights, when they were commanded to stoop to a monarch's caprices. In the minor buildings of Munich, and in some public ones, for which he was not referred to Italian examples, but in which his pure taste had free scope, Von Klenze showed the great ability which has made his name known throughout Europe.

The sameness of modern French architecture is likewise the result of political circumstances. Conceived on a grand scale, the works have been forced forward upon a common plan, the main object being to afford good space for any military operations which may hereafter be deemed necessary, to sweep away all narrow and troublesome quarters, and at the same time to furnish employment for men whom it would be dangerous to leave unemployed. The regularity of the streets and houses, and the hurry with which they have been erected, have, however, given little scope to the talents of French architects. They have refined the old Franco-Italian style; and in isolated spots in Paris, it bursts forth with charming freshness and vigour. This is more especially seen in the works of Visconti, of Duban, of Amadron, and in what is called the artists' quarter. In the long lines of the Rue Rivoli and the Boulevard de Sebastopol, the fire of French architecture seems to have "in pallid moonshine died," or only to flicker here and there in the sculpture of ornament and in the transposition of balconies. The French restorations of old Gothic buildings betray only too plainly their insensibility to their beauties. This is not the fault of their architects. Viollet le Duc's labours alone are sufficient to redeem them from that imputation. It results rather from the political necessity of doing the work, and of the vanity for coating the whole of Paris with a veneer of magnificence.

French architects seem generally to devote themselves to infusing a greater degree of refinement than it has heretofore possessed to Roman art, or rather to that slip from it which was transplanted and made such rank growth in France. However much it may by individual talent be occasionally disguised, it is the study of Greek monuments which has pruned the straggling coarse ornament which made up the "magnificence" of Louis XIV. One end of the line which strings modern French architecture together is seen in the Pompeian House of Prince Napoleon, the other in

the designs of Amadron. Both examples are very clever; but there is a vast amount of very different and indifferent stuff between them.

The Germans seem to have adhered more rigidly to the Greek models in their public buildings. Schinkel, in his many designs for public buildings, and notably so in that of the Museum at Berlin, has handled it with a power surpassed by no modern architect, and equalled only by the design of the Walhalla near, and the Glyptoteek at Munich, and, perhaps, by Elmes, in St. George's Hall, Liverpool. In their ordinary street architecture they betray a close analogy to that of France; and the drawings of the students of the Academy sent from the Berlin Academy to Brompton might really be mistaken for those yearly seen at the "Beaux Arts" in Paris. Their Gothic architecture is rather too prickly and metallic to suit our tastes. The new growth does not seem to have yet ripened there, although we must candidly admit that there are drawings in this style in the Austrian gallery, which we never anticipated seeing. The Votive Church, Vienna, by Henrich Ferstel, is portrayed in a series of drawings which are unsurpassed in the whole exhibition. They are not only on a large scale, but every touch indicates the masterly power which formed it.

The principal contributions from Prussia have been sent by the architectural publishers, Ernst and Korn. They are valuable, as giving us a better insight into contemporary Prussian works than a few views occupying the same space would do.

Hamburg is well represented by MM. Meuron and Haller, whose "buildings in the Zoological Gardens at Hamburg" show remarkable artistic skill and fertility of design. Rome sends us only some plans of mills for crushing olives; and Italy — as distinguished from Rome — a few Pompeian views. Spain gives us no indication of her modern architecture, and but a few specimens of what once made her famous in art.

Before noticing more in detail the foreign architectural works, we must remark that they are depicted less strikingly than those in the English department. Whilst ours are drawn in perspective, and highly coloured, theirs are more frequently simple geometrical drawings, with plans and details. Moreover, they seem to us to have been also designed geometrically, and perspective views, more often than not, show them to disadvantage. But, on the other hand, the plans and details which nearly always accompany them, give them a value which the English drawings do not possess. It enables them to be read at a glance, and to be thoroughly comprehended by architects.

Knowing what the French can do, and have so recently done in Paris, we certainly expected to see them in greater force, but we regret to find that most of their great architects are altogether unrepresented in the Exhibition. Only about forty or fifty subjects are included in the collection, and of these more than one half are proof engravings, lately published. Thus we have fourteen or fifteen sheets from the "Monuments Historiques," issued by Gide and Baudry, and about a dozen from Cesar Daly's "Architecture of the nineteenth century." These latter are further insufficient, inasmuch as they withhold the names of the architects whose designs they display.

Viollet-le-Duc treats us to some fine views of his restorations of the ramparts of Avignon, crowned with machicolations and battlements, and guarded by watch-towers. Its eight gates, and the bridge of St. Benzet, with its chapel in the centre, are all restored in the most conscientious manner, after a scrupulous examination of the ruins. Laisné sends a project for the restoration of the picturesque cathedral of St. Nazaire, at Beziers, famous for the horrible slaughter of the unfortunate Albigenses in the early part of the thirteenth century. The town hall at Compiègne, with its fine beffroi, angle turrets, and high pitched roof, is well represented by Verdier. Millet sends drawings of three churches, the best of which is that of Cogniat, Department of the Allier. It is very simple, consisting of a nave with three apses at the eastern end and a tower at the western end. Ruprich-Robert, whose designs are amongst the finest embellishments of Paris, has been content to contribute only a study of one of the old French abbays. The drawing is hung too high for proper examination. An engraving by Sauvageot (21), after Viollet-le-Duc, of the city of Carcassonne, gives a rare example of a restored city being as picturesque as it is in ruins. Normand sends seven fine drawings of Prince Napoleon's house, but by some characteristic mismanagement they are separated and hung in two different situations.

The Prussian architecture is best represented by architectural publications, although most conspicuously by a huge model of the Exchange at Berlin, in the eastern end of the nave. The "Brick Architecture of Prussia" (501-2) is a folio volume with fine examples from Osterburg, Jerichow, Krewese, Stendal, and Tangermünde. Adler's design for the new Town Hall, Berlin, is a dismal looking brick building, but it repays a more careful examination than it, at the first glance, invites. Carl Bötticher exhibits his love for Greek art in two works, "The Teutonic System of Ancient Greece," and "Designs for Architectural Ornaments." C. von Diebitch has a good view of a cathedral, and a creditable design for the town-hall at Berlin, but his views of the Alhambra, and especially that of the Court of the Lions, are not up to the mark. Ernst and Korn contribute a series of numbers of their Architectural Magazine, "Architektonisches Skizzen-buch," which will give our readers just such an idea of ordinary Prussian architecture as a volume or two of the "Building News" would afford a foreigner of our recent designs and erections. E. F. Giese, of Saxony, exhibits, in a series of seven photographs from the original drawings (521), the prize design for the new Opera House, Vienna. It is, in geometrical elevation, a pyramidal composition, the central portion being four stories and the extremities but one story high. It is in the renaissance style, with columns to each story, and sometimes smaller ones in the window-jambes. The "Drawings of a Princely Residence," by Paul Habelt, is of a most elaborate character, and would

cost, we fancy, more than princes have to spare now-a-days. We are indebted to Hitzig for the large model in the nave, to which we have already alluded, which deserves notice more for the good arrangement of the plan, and for the beautiful modelling of the ornament which accompanies it, than as a design for an important public building. Other designs, by the same architect, show the same Greek tendency, but we do not see in any the same lofty aim which reposes upon every work of his countryman Schinkel.

Knoblauch has three designs in the Exhibition, but there is one only, the new synagogue, in the Oranienburger Strasse, Berlin, which will arrest the eye of a visitor. It is Eastern in style, with a large central Moorish dome, and smaller ones at the angles. It is covered with elaborate and well designed ornament. A design for a small museum introduces us to Luce, a devoted admirer, seemingly, of the severer Greek style, whilst the drawings of Meuron and Haller, of Hamburg, possess that tasteful freedom in the employment of Italian art, which is only elsewhere seen in the best of modern French architecture. The drawings are altogether excessively clever, but the entrance is preeminently so. There are altogether five 'sheets of them (557). A small book by Meyer, "Handbook of Gardening," is devoted to the ornamental arrangement of gardens. In Von Quart's "Historical Monuments of Architecture in Prussia," there is a good view of the Schloss Heilsberg, and in Runge's "Brick Architecture of Italy," some accurate and detailed representations of the well-known Town Hall at Piacenza, the Palace on the Lungarno, at Pisa, St. Giovanni e Paolo at Venice, the Hospital at Milan, and the less known but no less beautiful St. Chiara at Siena. Other fine publications of Ernst and Korn contain the best of Schinkel's designs—all worth attentive study.—Salzenberg's monuments of early Christian architecture in Constantinople, Strack's architectural details, mostly taken from one house in the Leipziger Strasse, and the splendidly worked out Greek design by Stueler, for the new museum at Berlin.

In 579-86, we have another creditable Gothic design from Prussia, by Schmidt and Strauch. It is beautifully drawn, and we are mistaken if Viollet-le-Due has not greatly influenced the designers. It is sent here by the Royal Academy of Architecture, Berlin, who are large contributors to the Exhibition. The drawings of a city gate, by Aug. Tiede, are likewise very successful studies. Amongst the German oil pictures a painting by Von Klenze deserves notice for its architectural merit. "Athens in the time of Hadrian" is therein represented by one whose studies have enabled him, better, perhaps, than any of his contemporaries, to conceive it. It is composed of porticoes and caryatides, sculpture relieved by colour and marble columns. In the background the Acropolis is seen crowned by the walls and columns of "Pallas' fane." We would also direct attention to some wonderfully manipulated interiors by a Danish painter, H. Hansen, 1513, 4, 5, 6. They are rooms in the palaces of Fredericksborg and Rosenborg. As perspective studies they are amongst the most wonderful pictures we have ever seen.

STAINED GLASS IN THE INTERNATIONAL EXHIBITION.

WITH AN ILLUSTRATION.

STAINED Glass Windows for the enrichment of churches, for monumental purposes, and for the decoration of dwellings, are of two descriptions, Pictorial and Gothic, the former bearing the character of transparent pictures, to be judged of as works of art generally; the latter, of decorations accessory and subordinate to the edifices they adorn. Hence stained glass windows possess a relative, as well as an intrinsic, value.

Pictorial glass is preferred by some as enabling the artist to give a more life-like delineation of the human figure. This advantage, however, is obtained by the sacrifice of the special qualities of the glass itself, assimilating it, in fact, to painted porcelain. Gothic or decorative glass, on the other hand, exhibits in the highest degree the glowing and jewel-like effect of coloured glass, admitting at the same time the greatest beauty in its abstract lines, and a perfect harmony with architecture. Both styles, however, require invention, combined with skilful drawing and manipulation. To illustrate these remarks, the Virgin and Child by an Italian artist, and numbered 2021 may be taken as the extreme of pictorial glass, and Powell's window, designed by Jones, Class 34 A, as the extreme of the Gothic school. The time is recent when it was thought impossible to reproduce the glowing tints of old glass, more especially of the thirteenth century; but tints more varied, and fully equal in richness, now come from the studios of our leading glass stainers; for, owing to the increased demand for memorial windows, and for stained glass generally, many superior men have diligently studied the art, and glass makers also have been stimulated to prepare materials which leave nothing to be desired.

The result has been a simultaneous advance in the quality of stained windows and a decrease in their price, so that the richest figure work now averages but 30s. per square foot, instead of 50s. or 60s., whilst the ornamental designs can be procured for 25s. per foot down to 5s. for the simple but beautiful ornamental quarries.

The Commissioners have given great dissatisfaction in their defective provision for this branch of art, evincing in fact, their ignorance of its requirements. In the galleries a borrowed and diffused light only is obtained; whilst in the transept, worse still, the sun shines upon the front of the stained windows, instead of behind them, thus rendering the colours almost invisible, revealing only the lead work. Full allowance must therefore be made by visitors for these drawbacks.

The stained windows exhibited by Heaton, Butler, and Bayne, in the west transept or Austrian department, are examples of the thirteenth and

fourteenth century styles, and in the galleries, Class 34, of the fifteenth and sixteenth centuries.

In these they have endeavoured to combine the architectural character with the most refined and original designs, and the richest jewel-like effect of colour.

Of the windows exhibited in the gallery, Class 34, the most striking is, perhaps, that of "the Adoration," in which the background is composed of numerous tints of colour varying from light blue green, to purple; the expressive head of the Virgin is most carefully and delicately treated, but the unfortunate position of the window is fatal to its beauties, which require a strong clear light to bring them out in their integrity.

The heraldic window is treated in a most simple but artistic manner, and the colours being on a white quarry ground, will commend it to the taste of connoisseurs.

The window above the "Adoration" is intended for Skulthorpe Church, and illustrates the history of Ruth; here, also, coloured ornamentation on white ground is used to give relief to the figures. The other window, for Langton Church, contains the principal events in the life of our Lord, the treatment being of the ordinary character.

There are several superior windows in the west transept, Austrian Department. The most unique is the "Procession of the Burial of our Lord," the original cartoon of which is exhibited in Conduit Street Architectural Exhibition, and has met with general admiration.

We present our readers with an engraving of a Stained Glass Window, by Messrs. Heaton, Butler, and Bayne, of Cardington Street, intended for the Baptistery of St. Alban's Abbey. Considerable repairs and restorations have been recently effected under the superintendence of Mr. Gilbert Scott; and the elaborate workmanship and brilliancy of the colouring of the present work of Mr. Heaton and his co-partners, will make it a gorgeous addition to the varied beauties of the baptistery.

It is exhibited in the West Transept of the International Exhibition, immediately over the entrance to the Annex for machinery in motion, and though placed in an unfavourable light, its colouring, workmanship, and some novelties of construction can scarcely fail to attract the attention of visitors, especially of amateurs of the art.

The greater part of the Abbey, and especially the baptistery, being of the date of the thirteenth century, the window was necessarily designed to accord with it. Fortunately there are sufficient remains of stained glass of this period to indicate the principles that should guide us at Salisbury, and at Bourges and Chartres in France, and to prove that it was as well understood at that time as the architecture it enriched.

These fine old windows have never yet been surpassed in design or in management of colour. The window illustrates the "Baptism of our Lord," and its antitype, the "Passage of the Red Sea." These subjects, though severely treated, are well and carefully drawn, the features and folds of the draperies are expressed by simple black lines, assisted by a very slight shadowing.

It is in the "Passage of the Red Sea" more particularly that a new treatment of stained glass is adopted. It has been found that the more uneven the various pieces of glass are, the greater the richness of the completed work. It has hitherto been usual to reserve the selvage pieces of glass which are most uneven in tint for the choicest parts of the window. In this window the greater part of the glass has been gradually ground away from one side and afterwards polished. The back grounds of both subjects are composed of great numbers of small pieces of blue glass, varying in tint from a light greenish blue to a purple. The full and somewhat fiery tone of the subjects is relieved by the quiet violet and yellow diaper work on which they are set. The wide border round the whole window is composed of conventional foliage, in which birds, reptiles, &c., are entwined; and the background is a subdued greyish blue; this gives value to the rich blue of the subjects.

The glowing effect of the Saviour's robe in the Baptism is produced by mixing the lighter tints of red, produced by the chloride of gold, with the darker, made from the protoxide of copper; these are neatly united together in the folds of the drapery by the leaden bands.

The window is glazed throughout with a round lead similar in make to the old cast-lead, which has given proof of its quality by doing good service for 800 years. The arms of Dr. Nicholson and of the town of St. Alban's are introduced in the border. Were the position of the window in the Exhibition more favourable, there can be little doubt of the judgement of the public upon its general effectiveness.

The restorations of the Abbey Church of St. Alban's, although effected at a cost of upward of £3,000, leave very wide scope for the exercise of the munificence of future donors, especially in the ornamental work of the monuments, chantries, and chapels. The important matter of drainage has been very thoroughly done throughout the whole of the walls on the north side by removing a large mass of accumulated earth, constructing an air-chamber for intercepting any external damp from coming in contact with the walls. The water is now conveyed by a system of pipes from the leads of each roof into the great drain running parallel with the walls about ten feet distant. The whole of the roofing of the north aisle has been reconstructed, and a portion of the roof of the north transept.

St. Alban's Abbey, which will be adorned with this window, has hitherto been almost destitute of stained glass. The "Act of Mercy" window, executed for Harpenden Church, is another example of the good effect resulting from alternating rich subjects with a subdued ornament. The numerous figures are well drawn and coloured, and the composition contrasts favourably with similar subjects exhibited by Holland in the same department.

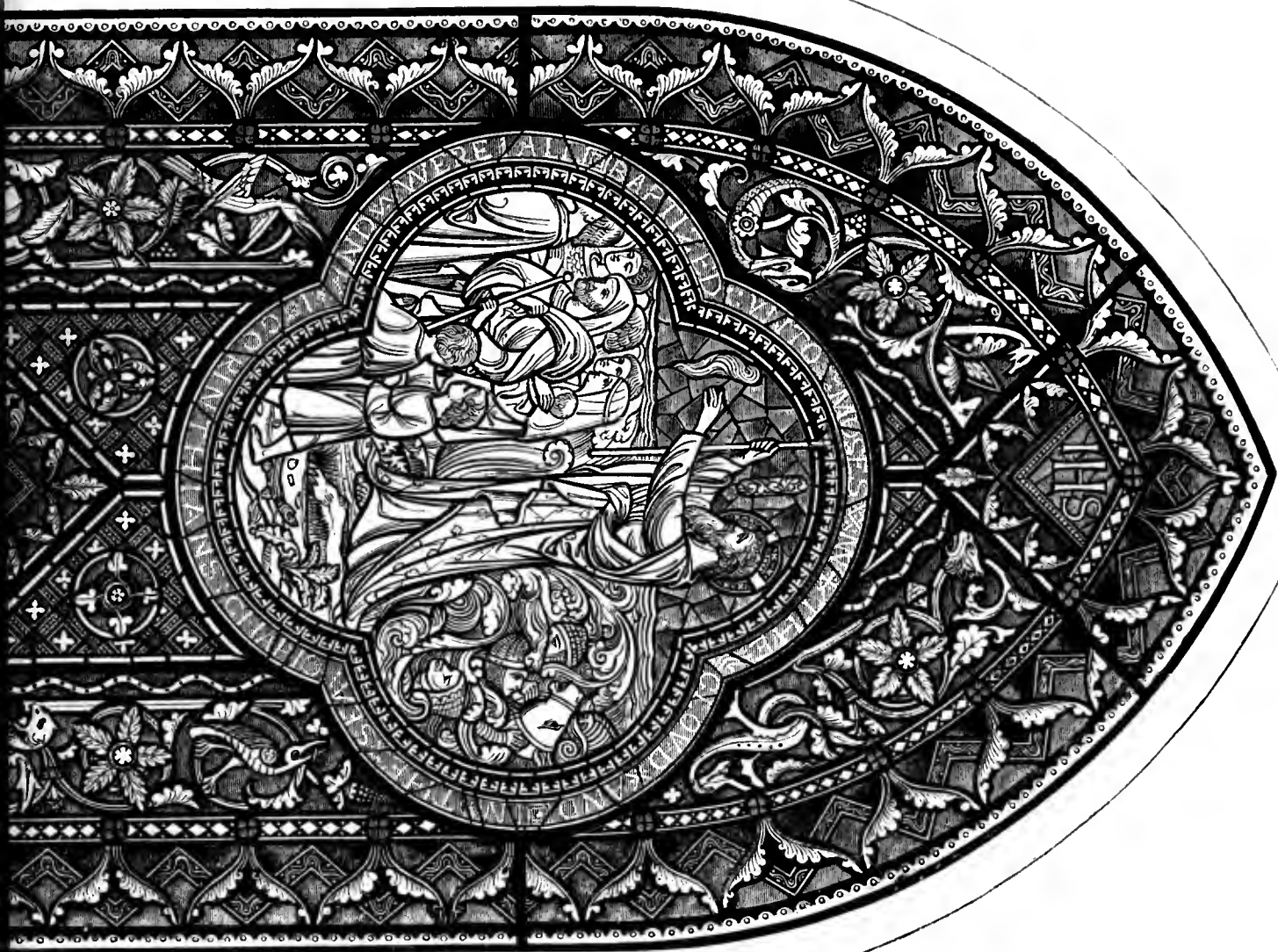


PHOTO ON WOOD BLOCK BY J. B. B. B.

WINDOW : IN : NORTH : AISLE : OPPOSITE THE FONT : IN

ST. ALBANS ABBEY HEATON & BUTLER LONDON

241 CARDINGTON ST. HAMPSHIRE, ENGL.





MR. MONCKTON MILNES ON THE INTERNATIONAL EXHIBITION OF 1862.

ROYAL INSTITUTION OF GREAT BRITAIN.

AT a recent meeting of the Royal Institution, R. MONCKTON MILNES, Esq., M.P., delivered an address on the "International Exhibition for 1862." The speaker stated that the managers of the Institution had arranged that some discourses should be there delivered, on the most important natural products to be exhibited at the Great International Festival, and had thought it advisable that these special addresses should be prefaced by a few considerations of the nature and scope of this wonderful congregation of the industries and intelligences of the world. He was much flattered at being selected to perform this duty, and could assure the members present that he should come into no competition with the eminent persons that would follow him, but should confine himself to those generalities and common-places which are not always the more displeasing for being in some sort the reflection of their own minds.

It was the habit of this Society to deal rather with facts than speculations, and he would therefore direct their attention to the geographical and political conditions which alone rendered possible such an event as this. It had been written with sufficient accuracy for verse, that—

"The total surface of this spherèd earth
Is now surveyed by philosophic eyes;
Nor East nor West conceals a secret worth—
In the wide ocean no Atlantis lies:
Nations and men, that would be great and wise,
Then knowest, can do no more than men have done;
No wond'rous impulse, no divine surprise,
Can bring this planet nearer to the sun,—
Civilisation's prize no royal road has won."

The accessibility of the ocean-waters of the globe was a first necessity to this end, and this had been now accomplished from the ice-bound fires of Mount Erebus to the grave of Franklin. We could not say quite as much of our knowledge of the land of the world, but we perfectly understood the limits of our ignorance, and could fairly assume that there was no position of the earth yet unsurveyed which could in any notable degree add to our physical science, or extend our observation of the habits and destinies of mankind.

Although great continents are represented in our Exhibition only by their fringes, we can hardly contemplate any such conversion of nature or man as should people the sandy spaces of Africa, the vast pastoral steppes of Central Asia, or those huge fields of the unlimited liberty of animal and vegetable life which stretch in South America from the tropics to the polar snows, with the higher forms of industry, art, and civilisation. It is enough that no longer can Tartar hordes swoop down on richer and fairer lands, and that the sage and saleratus prairies of North America cannot check the enterprising outgrowth of the Anglo-Saxon race.

And this brings us to another necessary condition of our Exhibition, the security of the seas, and the general facility of commercial intercourse. The exceptional piracy which obstructs the trade of the waters of Oceania, and which the energy of Sir James Brooke has done much to repress, was once the custom of the world, and carried with it no notions of cruelty or disgrace. This evil was partially remedied by placing commerce under the safeguard of religion. Where the modern state establishes a factory or a free port, the old state built a temple. Thus the Tyrian Hercules linked together the trade of Greece and Phenicia in a common worship; thus the fane of Jupiter Ammon was the great resting-place and protection of the caravans of the desert; thus the lines of the chief Catholic pilgrimages were the paths not only of all travellers but of all merchants in the middle ages. The interchange of the gifts of God was sanctioned by Pagan and by Christian piety, and the notion of connecting trade with any inferiority of social station or intellectual power, is a perverted remnant of the feudal system, where the jealousy between town and country tended to discredit labour and to idealise brute force.

The speaker proceeded to draw the distinction between ancient and modern trade. In the old Asiatic nations, where influence is still palpable among mankind on the score of authority and the bond of religion, the ideas of free trade and competition would have been incomprehensible. The exclusion of foreigners from the internal navigation of the several countries was universal, and none were permitted even to enter foreign ports, except with the *tessera hospitalis*, or some other symbol of a commercial treaty. Bars were thrown across the mouths of some rivers, as by the Persians across the Tigris after their conquest of Babylon; traces of which impediments to navigation still remain. And in modern Europe the growth of liberal commerce has been slow indeed, and it is one of the happiest privileges of our time that, as regards ourselves at least, we have come to see its consummation. In Sir Dudley North's "Discourse on Trade," published in 1691, the principle is laid down "that the whole world as to trade is but as one nation or people, and therein nations are as persons." But the Hollander and the Portuguese long remained the objects of a commercial animosity, which did not prevent the one from occupying our fisheries up to the very coast, and the other from sharing with us the dominion of India.

The social and political conditions represented by our Exhibition next occupied the attention of the speaker. The whole of this marvellous combination of energy and art is the result of free labour—of the spontaneous industry of mankind. It is not the mere application of local nature to local designs, but the collation and transmutation of most diverse and distinct elements to the use and benefit of our race; the juxta-position of

our coal, and iron have suggested the manufactures of Sheffield, but it is the borax of Tuscany which assists the ingenious labourers of Colebrook Dale. It is the sign and symbol of the general education of the world, which renders it impossible that discoveries can be neglected or arts be lost. The ignorance and superstition which kept mankind in unnecessary physical pain after the invention of the "spongia somnifera" of the 12th century, can no longer check the anæsthetic powers of a beneficial nature, nor would it require a Harvey to revive, however he might be required to develop, the knowledge that perished with the ashes of Særvetus.

But besides the intercommunication of nations in space, the speaker remarked, our Exhibition surely owes much to what he would call the trade of time, the thoughts, the feelings, the interests, that pass from generation to generation; the arts of Greece, the laws of Rome, the religion of the Semitic peoples, the triple elements of modern civilisation. The silent East gave the alphabetic character which has transmitted all the speeches and varied literature of the West; the Brahmin preserves the sacred language in which the linguistic science of modern times traces the mother-tongue of all the Indo-Germanic dialects that pass from mouth to mouth beneath these lofty domes.

The singularity of the circumstance that England should be the scene of this meeting of the nations was next alluded to. It was an illustration of the advantage of our insular position, which being combined with sufficient territory, gave us at once the best political condition of external power and domestic independence. Our greatest danger in history has been not our own conquest, but the conquest of France, which must have absorbed us into the continental system. Now, the peril of our power lay in the rapid political and moral elevation of the other European nations, but we could well afford to sacrifice some individual superiority to the common gain of mankind.

The speaker concluded with noting some of the probable effects of this great jubilee of commerce. Large congregations of men had always vividly struck the imagination, and the jubilee of Pope Boniface so occupied the mind of Dante that he illustrates by it one of his supernatural pictures, and fixed it as the date of his spiritual journey. Such assemblies have always been looked on as harbingers of peace, and we know what were the expectations of 1851. But though that hope has proved delusive, we may yet feel thankful that, with the exception of the American calamity, all the disturbances of the world since that time have been the conflicts of a lower against a higher civilisation, in which the higher has had the mastery. The materials here brought together must impress on the spectators the mutual dependence of nations, and the interests of amity. One of the chief objects of interest would be the various applications of art to industry; advantages perhaps somewhat balanced by the injury of the application of industry to art. As art becomes mechanical, it loses the spontaneous dignity which makes it most divine, and it seems impossible to diffuse and repeat it, without some diminution of its highest faculties. But this qualification does not extend to the relations between industry and science, there the moral is as certain as the material profit; intelligent labour is substituted for the mere exertion of brute strength; the supply of comforts is extended from the luxurious classes even to the necessitous; the diseases consequent on physical hardship are diminished, and the average longevity of man increased. To the progress of scientific education not only the philosopher but the statesman looks for the diffusion of public happiness and the permanence of modern civilisation. If the states that now rule the world are to escape the doom of Babylon and Rome, of Egypt and of Greece, it is in that they have not made their science the monopoly of a caste or a priesthood, but they have placed it more or less within the reach of the individual intelligence of the humblest citizen. Let the education that enables mankind to apprehend and value truth proceed commensurately with the discoveries of science, and the community will gradually but continuously absorb into itself that knowledge which makes decay impossible, and our country may boldly and confidently meet whatever destiny remains for it in the inscrutable designs of the Creator and Ruler of the universe.

MR. NEWTON ON ANCIENT ART.

MR. NEWTON, the keeper of the Classical Antiquities at the British Museum, has just been delivering four lectures at the Royal Institution, on the successive Tuesdays, on the History of Ancient Art, with especial reference to Greece. In the first, he commenced from the earliest period of which there is any record whatever, and showed that, while all sculpture is divisible into two leading classes: 1. Sculptures in the round; and 2. Relief, whether alti or bassi, Art itself may be divided into five great periods, viz. 1. Heroic and partly Pre-historical, from the earliest dawn of art to B.C. 776 (the date of the Institution of the Olympic Games). 2. Semi-historical, from B.C. 776 to B.C. 580. 3. Historical, from B.C. 580 to B.C. 478, the end of the Persian War. 4. The period of Highest Art, from B.C. 478 to B.C. 431, the date of the death of Phidias, and the commencement of the Peloponnesian War. 5. The period of Gradual Decline, marked, however, by the presence of many great artists, such as Lysippus, Polygnotus, Praxiteles, &c., from B.C. 431 to the commencement of the Roman Empire.

In his first lecture Mr. Newton traced the gradual development of some form of Art from the rude stocks of wood and stone of the Heroic times, usually called *terme*, to the primitive idols, made of a central block, with heads, arms, and drapery, added, generally in different materials; of which idols, doubtless, the Palladium Diomed stole from Troy, the figure of the

Argonautic Chryses, and the original Diana of Ephesus, may be considered as specimens. None of these oldest forms (*ἑβανα*) have been preserved; but we may gather some idea of what they were like from the earliest vases, between B.C. 776 and B.C. 580, which exhibit such scenes as the Last Night of Troy, the Altar of the Goddess Chryse, &c. Homer tells us little positively of the art of his period, but much negatively. It is clear that when he speaks of the ornamentation of cuirasses, of the shield of Vulcan, and the embroidery of Helen, he must have seen similar works, some of which we know were preserved (even to the time of Pausanias) in the treasuries of different monarchs, such as those of the Kings of Lydia, of Atreus at Mycenæ, at Orchomenis, or in the great temples, &c. All such works were reliefs analogous to those on the fragments of the chariot from Perugia, now in the British Museum. With them may be aptly compared the bronze bowls found by Mr. Layard in the treasury of Sardanapalus at Nimrud. It is probable, indeed, that many genuine specimens of Assyrian art were preserved till a late time in different parts of Asia Minor, if not in Greece itself. Pausanias's description of the famous chest of Cypselus (which Mr. Newton compared with the bridal *cassoni* of Italy) shows what the art must have been like; for on the chest we learn that there were reliefs in gold and ivory arranged in parallel rows, with their names written over the different personages represented. The same principle is observable on the most Archaic vases.

The third, or historical, period was the most important one described in the first lecture, as this was the time when Greece was teeming with great artists. The cause of the remarkable artistic progress of this time may be not improbably traced back to the fact that about this period magnificent festivals became common, with exhibition of athletic sports. It was also the time when the principal colonies of Greece, at Cyrene, in Spain, and in Sicily were founded, and when the greatest of the early temples at Posidonia, Ægina, Selinus, and in Asia Minor, were commenced. Art was also, doubtless, greatly influenced by the patronage afforded to the Greeks by the Egyptian sovereigns Psammetichus I., Apries, and Amasis, and by the establishment of the Greek factory of Naukratis. Some specimens of the art of this period are still extant, such as the Agamemnon relief at Paris, which was found at Samothrace; the figures from Pollediana, near Vulci; the seated figures from the Sacred Way at Branchida, brought to England by Mr. Newton, and a remarkable inscribed lion and sphinx from the same place; together with some very curious gold ornaments recently found at Camirus. Some of the latter betray Phœnician influence, though among them, also, are genuine Egyptian cartouches. The early coins of Posidonia and Caulonia show also what was the prevailing style at the end of the third period. It is obvious from all these examples that Greek art progressed gradually step by step, exhibiting from time to time the predominating influences of Assyria and Phœnicia, till it at length worked itself clear of the earlier trammels, and was ready to appear in its full force under the giant hand of Phidias.

In his second lecture Mr. Newton handled what for want of a better name may be termed the Phidias period, namely, his fourth division between B.C. 478 and B.C. 431. In this he traced the history of art from the early and hard works of Calamis and Canachus, to those of Myron and Polyctetus, and finally to Phidias himself. He showed that Calamis is especially noticed by Pliny as the first sculptor who represented correctly the muscles of the human frame; and that this was still more true of Myron, who, however, appeared to have cared more for the animal representation than for the indication of the inward spirit. Far greater in many respects than any of the preceding was Polyctetus, who was, however, considered by the critics of antiquity as admirable rather for the grace than for the sublimity of his figures. "His gods," said they, "wanted majesty." During the same time painting was greatly developed; and, perhaps, attained its maximum of excellence in the hands of Polygnotus. It is clear, however, that his early paintings must have exhibited extreme simplicity, as four colours only were made use of. Polygnotus is considered by Aristotle the greatest of Ethical painters, and his style seems to have been chiefly remarkable for great firmness of outline, breadth of treatment, and certain dread of *Chiaroscuro*. No works of Polygnotus have been preserved; but we trace some shadow of their beauty in the vases of the time of Phidias—with scenes representing the leave-takings of heroes, such as Hector and Priam, and priestesses bringing up animals to the sacrifice.

But the hero of the period was unquestionably Phidias, who had attained some eminence at Athens as early as B.C. 452, and who is most known to us by the description of his famous statues of Zeus at Olympia, and of Pallas in the Parthenon, and by the sculptures of the Parthenon itself, a great part of which are now in the Elgin Room of the British Museum. The two great statues above mentioned were composed of gold and ivory, which were plated and embossed, and attached to a central core of wood. This mode of workmanship had been handed down in Greece from very early times. Ivory was, as a substance, the best adapted for the representation of flesh, and afforded great opportunities of skill to the artist himself. These statues were above forty feet in height; and that of Zeus was held by the ancients to be one of the seven wonders of the world.

Of the grandeur of the conceptions of Phidias, and of the beauty of his lines, those can best judge who are familiar with the statues and reliefs now in the Elgin Room. Mr. Newton described at great length the meaning of these sculptures, so far as it is possible now to ascertain it, and showed by ample illustrations the mode in which its general whole might be restored, either from existing monuments, or from some drawings made by Carrey, before the temple was so much ruined, and while many figures, now hopelessly lost, still adhered to its walls. The frieze is generally considered to be the

glory of the chisel of Phidias; and in this style of low relief he has probably never had an equal.

In his third lecture Mr. Newton surveyed especially the period between B.C. 431, the commencement of the Peloponnesian War, and B.C. 333, the rise of Alexander the Great—a period memorable as that in which Socrates and Alcibiades were the two most prominent characters—when the Athenian supremacy was put an end to—and when the corruption of manners, so well noticed in Aristophanes and other writers, was just commencing. Of this period, Praxiteles and Scopas were the two principal sculptors, and in both of these the characters of the later school of decline may be noticed. The gods and heroes of these artists have no longer the sublimity of Phidias, and there is always a direct appeal to the senses. The Venus of Praxiteles was so lovely that long journeys were made to visit her statue at Onidus; we are also told that when Nicomedes of Bithynia offered to pay the whole of the public debt of Onidus on condition that this statue should be his, the Onidian people indignantly rejected his proposal. Praxiteles was one of the first to represent the perfectly nude female form, which alone indicates a remarkable change of manners. It was supposed that the Venus de Medici was a work or a copy of a work by Praxiteles; it is, however, now generally recognised as the work of a much later artist. Though we have probably no specimen extant from Praxiteles's own hand, there are several torsos in different European museums which indicate more or less the style of his school. And there is, above all other ones, the celebrated statue of the Venus de Milo, at Paris, which is an unquestionable Greek work, of a date little, if at all, more recent than that of Praxiteles or Scopas. Of Scopas there was, till the recent discovery by Mr. Newton of the sculptures of the Mausoleum, scarcely any representative in Europe; the Apollo Pythius, however, now at Rome, is probably a bad Roman copy of the statue by him, which was placed by Augustus in the Palatine Temple after the battle of Actium. Scopas was chiefly famous, according to ancient writers, for his treatment of the members of the Dionysiac Theasos, when under the influence of their orgies; and he seems to have exhibited great skill in the development of beauty in connection with strong passion. Some indications of his style we are able to trace in such works as the well-known Baccante with the kid in her hands, and in the reliefs on many fine Roman marble vases with Baccic subjects. Scopas was noticed in antiquity as one of the four sculptors whom Artemisia employed on the decoration of the tomb of her husband Mausolus; and though we cannot determine which were his, there is no reason to doubt that some of the late recovered marbles from Halicarnassus owe their excellence to his chisel.

Mr. Newton's last lecture was devoted to the last period of Greek art—the Macedonian—which may be considered as extending to the commencement of the Roman Empire. It was a time of peculiar magnificence and wealth, when new fields of commerce had been opened out and great engineering works undertaken; when, too, the works of imagination had become daily more feeble; when the ancient purity of the Greek language was broken up, and that dialect was formed of which we have specimens in the Alexandrian Greek of the New Testament. Artists were no longer independent workers—the friends and the instructors of the rulers—they were simply subservient to them, and painted or sculptured to please the greatest men of their day. Thus it is recorded of Alexander, that he declared Lysippus and Apelles alone should record his portrait on their marble and canvas respectively; and, generally, there was an attempt in portraiture to blend the man and the mortal, and to give the royal personage the attributes and the physiognomy of the Deity. Hence it is that this period, defective as it was in great works of the imagination, was eminent for the portraiture it produced, many of which are still unquestionably in existence. Some of the statues attributed to Lysippus doubtless show skill in handling the materials, but they lack the majesty of the earliest artists, and you never forget the artist in the work he has produced. One especial tendency of the school of Lysippus and his followers was his naturalism, the result, possibly, of a reaction towards the study of nature, which, however, ended in a loss of dignity just in proportion to the minuteness with which the natural forms were copied. The heads of Mithridates, Ptolemy, Solon, Philoturus, and Arsinoe, on their coins, show the extent to which the art of portrait busts had been carried. And the seated Aristotle of the Palazzo Spada, and Demosthenes of the Braccio Nuovo of the Vatican, exhibit what was done in sculpture. In ideal subjects, the dramatic element is noticeable as widely preeminent; hence such groups as the Laocoon, which rather represent *tours de force* than actual copies of nature. Other instances may be seen in the Dying Gladiator, and in the group misnamed Arria and Patus; while of the latest Athenian School we have the famous Belvidere torso, so much admired, by Michael Angelo, the Venus de Medici, the Farnese Hercules, and the Fighting Gladiator. To this latest period belong also several fine *camei*, and the well-known Portland Vase.

STUDIES OF MODERN ARCHITECTURE AT HOME AND ABROAD.

By G. R. BURNELL, Esq.

From "ARCHITECTURE OF THE VICTORIAN AGE."

IN one of his earlier works, Victor Hugo said very truly that "quand on sait voir, on retrouve l'esprit d'un siècle, et la physionomie d'un roi, jusque dans un marteau de porte;" and it is precisely this connection between the inner soul of a nation, and the external expression of it in its works of art, which gives to the science of Archaeology its deepest interest. "The noblest study of mankind is" said to be "man;" and so every form

in which he displays his heart of hearts must merit and repay the study of those who endeavour to ascertain the meaning of the various social phenomena which influence or characterise his history. And it is to be observed that the terms of the latter portion of the preceding sentence have not been used lightly; for the monumental arts of an age and of a nation have a strange action and reaction on the people who examine them daily. Properly understood, then, the "sermons in stones" may enable us to supply many blanks in the written stories of past ages, and to revive the living pictures, perhaps long since effaced, of the thoughts, feelings, aspirations, and faith of nations only known in chronicle by their deeds of destruction. History, as we read it in books, is too often a mere record of deeds of war and violence; the power and energy of construction are to be divined from the monuments of an age or country.

It would far exceed the limits which could be allotted to the articles of a publication, such as is now presented to the students of art history (as displayed in contemporaneous architecture), were an attempt made to work out the preceding notions to their natural consequences, throughout the whole of the long period of man's tenancy of this "sepulchral clod." A careful comparison of the works in course of erection in the most important cities of the civilised world, or which have been completed within our own time, will, however, serve well to "point the moral" sought to be demonstrated; and indeed society has passed through such marked changes within the period which has elapsed since 1814, that the art history of that time may serve to elucidate many questions which would throw a reflex light on those which have gone before. The general diffusion of education, the improvement of the analytical process of investigation, the development of the means of intercommunication, the great strides made in manufacturing industry and commerce, and the thousand ways in which man has recently, in sober truth, "made fire, flood, and earth the vassals of his will," have produced results so startling that society has, in the last half-century, been more changed in all its external expressions than it had been in any previous two or three centuries. What is the moral to be learned from this restless, ceaseless striving after a perfection which recedes as we advance, and in the pursuit of which we find that the gain of to-day only opens up the want of the morrow? What are the prospects, what the dangers, hopes, and fears to be anticipated from the spirit now abroad? Is there "good in everything" going on around us, either for the moral or for the intellectual advancement of our race? and have late years furnished lessons for our guidance or for our warning? These are noble subjects for enquiry, and it is proposed in this and in some subsequent articles, if favourably received, to discuss the bearings of recent architectural and archaeological revolutions upon their solution.

The first enquiry which presents itself, is the one as to whether periods of excellence in art correspond with any peculiar conditions of social organisation? for, to limit our observations for the present to the two leading nations of Western Europe, England and France, we may observe that within the last half-century, there have been three distinctly-marked phases in the history of architecture, corresponding rudely with the great political dates of 1814, 1830, and 1848. Of course, Architecture, in the two countries thus named, has assumed characteristics which are in the respective cases, "racy of the soil;" just as, during the period of the great Revival of classical art the architectures of Florence, of Rome, and of Venice bore the impress of the respective states of society amongst which they arose; and as must always be the case when the rude materials employed, the atmospheric conditions, and the social organisations of nations, differ notably. But in spite of these local modifications, it is easy to perceive that every one of the great changes in the architectural expression of the two countries named, have borne a marked parallelism with the contemporary political events, the nature and extent of which it must be of interest to study.

Previously to 1814 the iron despotism of the Empire of the first Napoleon had effectually crushed everything like originality of thought in the French people, and had drilled the national mind into the uniformity of a camp. The architecture of his day bore indeed the physiognomy of the Emperor; and it was modelled upon so lifeless an imitation of Roman imperialism, that it is easy to understand the cry of the aspirers after freedom of thought who sighed, almost in despair, for the man "qui les délivrerait de ces éternels Grecs et Romains." There was, however, a solid grandeur, a bold, simple, massive effect about such buildings as the Bourse, the Madeleine, the Arc de l'Etoile, l'Arc du Carrousel, la Colonne de la Place Vendôme, the Marché St. Germain, the Entrepôt des Vins, the Abattoirs de Paris, the Pont de Jéna, &c., which must always preserve the buildings of this period from contempt, even if they should be regarded with dislike. They were stiff and affected, it is true, but they were not little in any sense of the word. When Napoleon fell, however, and the Bourbons introduced the freedom of constitutional government, and when men's minds (which had during the long wars of the Republic and of the Empire been concentrated in the great struggle for existence at first, and then for power) could be turned to the cultivation of the arts of peace, a great change soon came over the spirit of the nation, which displayed itself in the altered character of its architecture; perhaps not quite so distinctly as it did in the arts of painting, sculpture, music, and in literature and philosophy, but still perceptibly so. The churches of Notre Dame de Lorette, of St. Vincent de Paul, the Chapelle Expiatoire de la Rue d'Anjou St. Honoré, the completion of the Chamber of Deputies, the commencement of the Palais du Quai d'Orsay, may be cited as illustrations of the public buildings of this period; but the private buildings of the principal towns of France display the tendencies of the architecture of the "Restauration" in a still more decided manner. There is to be found in those buildings erected shortly after the fall of the Empire, as it

were, a spirit of revolt against the rectilinear style which had prevailed during the days of the crowned soldier; and towards the end of the Restauration the love for mediæval art began to display itself simultaneously with the brilliant appearance of the romantic school of literature. The galleries Vero-Dodat, Choiseul, Colbert, des Panoramas, the theatres du Vaudeville, Ventadour, &c., may be considered to represent the former phase of French architecture; the reconstruction of the Maison de François 1^{er}, and the commencement of the Ecole des Beaux Arts, of the second. But France had been so exhausted by the wars of the Empire, by the foreign occupation, and the perpetual struggles and contests of parties during the short period of the reigns of the returned Bourbons, that the results of the efforts then made to improve the state of architecture only became apparent after their successor had reduced society to something like order after the fearful outburst of demagogism of 1830.

During the same period (that is, between 1814 and 1830) architecture in England passed through the phase characterised in the beginning by the productions of Wyattville, Seane, and Nash, or of Jupp, Cockerill, senr., and Hardwick, senr.; and towards the end by Smirke, Inwood, Wilkins, Jorden, Bedford, Decimus Burton, B. Wyatt, Rickman, Britton, and Pugin, though the three last-named artists were rather archaeologists than practical architects. The buildings of London, and indeed of England generally, were then as deficient in taste and artistic feeling as it is possible to imagine, externally, at least; and internally, more attention was paid to physical gratification, to comfort, than to anything like intellectual expression. Practically, we had long been excluded from all interchange of ideas with the rest of the world by the struggle we had sustained against the French Revolution; and having been victors in that struggle, we had fancied that others ought to learn from us, not we from them. Our arts, and our architecture in particular, at this period, were intensely local in their feeling and mode of expression; and as our local peculiarities had become exaggerated through our isolation from the rest of the world, they led us to the adoption of a style of architecture for many years which can now only be looked back upon with feelings of shame and of regret. Buildings like the Custom House, the old parts of Buckingham Palace, the Law Courts of Westminster, Regent Street, the Regent's Park Terraces, the Pavilion at Brighton, &c., are now thought to be so intensely ugly that the only surprise we can feel is, that they should ever have been erected. Yet they were admired at the very same time that the gates at Park Corner, Covent Garden Theatre, the Post Office, St. Pancras Church, the churches in the Waterloo Road, at the corner of Kensington Common, the Lothbury corner of the Bank, &c., were in course of construction, and when the revival of mediæval art was beginning to make itself felt. It would really seem that during the great struggle of the Revolutionary wars all the energy of our nation had been turned to meeting the necessities of the contest; and that though our commerce, our manufactures, and our means of intercommunication had attracted the attention of our rulers, because they furnished the elements of material strength, the finer arts had been designedly neglected, as being likely to lower the moral tone of the nation. When peace came, the artistic feeling of England no longer existed; and the nation which had produced the Reynoldses, Gainsboroughs, Chamberses, Adames, Bacons, and Bankses of the latter end of the eighteenth century, was content to admire the Wests, Fuselis, Wyattvilles, Soanes, Westmacotts, and Nollekinses of the beginning of the nineteenth. The imitation of pure Grecian architecture, which became fashionable about the end of the Regency, was, in its way, a vast stride towards a purer and nobler taste; but the reason why we thus adopted the severely beautiful style of the Ionian and Doric rectilinear forms, whilst they were rapidly passing out of fashion in other countries (for there is fashion in these things), must long remain a mystery. It is curious that the building materials we use, and the climatological conditions of England, are far from being so well adapted to the trabeated architecture of the Greeks, as are the fine building stones and the clearer atmosphere of France. Yet, in our case, we persisted for years in carrying out huge horizontal openings by the use of cement and bricks; whilst our neighbours turned by preference to the practice of Vignola and of the Italian architects of the end of the Risorgimento for models and instruction. The latter had, like all who sought their inspiration from the study of classical Roman art, adopted vaulted construction instead of the trabeated one; and we therefore find that the French architects of the "Restauration" had continued in the same course.

(To be concluded in our next Number.)

THE BONES AT ROTHWELL.

MUCH interest has been lately excited amongst the archaeologists of Northampton, as to the origin of the human bones which are stacked, in ghostly order, in a vault at Rothwell. This crypt was discovered nearly an hundred years ago, by the breaking in of a vault when digging a grave: and various have been the speculations concerning them. Some have supposed, from their huge proportions and number, that they were skeletons of "The grand old Sea-kings of the Northern Continent, the stalwart champions of Odin," and Major Whyte Melville, the author of "Holmby House," has suggested that "the vault in which these remains are deposited was a receptacle devised by the Saxons as a burial-place for their Danish foes; that the Saxons stored them carefully in their position, in order to visit at intervals, and in triumph, these trophies of their prowess." Some have supposed them to be the remains of the slain of battles during the Wars of the Roses, or of the Civil War, whilst others have suggested that they were the victims of the Great Plague. At the last monthly meeting of the

Committee for Local Antiquities, in connection with the Northamptonshire Architectural Society, a very interesting paper was read on the subject, by SAMUEL SHARP, Esq., F.G.S., in which he relates the account of his two visits to the crypt, with Mr. J. T. Irvine, the superintendent for Mr. G. G. Scott, in the restoration of St. Sepulchre's Church, Northampton. Mr. Sharp calculates that the maximum number of skeletons which are represented by the bones in this crypt is about 3,825, while Major Melville supposes that there could not be less than 30,000; that there is no reason to believe that they are all skulls of adults, or of males, and that the "ghastly shattering wounds" were doubtless "injuries sustained by the *dry bones* from mattock and spade in their exhumation previous to their final deposition in this crypt." This plain solution of a problem which has puzzled many antiquarians entirely destroys the romance with which the clever novelist surrounded it. Mr. Sharp shows, that in the history of the world it would be impossible to find more than a dozen battles in which 30,000 had been slain on one side; that, indeed, the crypt did not exist in Saxon times, but was built about the year 1180. "The bones, therefore, had not been deposited before the latter half of the thirteenth century," and he considered that "there were reasons for concluding that these bones were not placed in the crypt until a much later date." "It is evident," he continued, "from the presence of the fresco painting, and from the windows, that this crypt was used as a chapel, and for the holding of services. Crypts, in the old Catholic times, were used both as places of sepulture and as mortuary chapels, in which masses were said for the repose of the souls of the builders, or of those whose bodies were deposited therein; they were also used for the midnight Easter services, and for offering the prayers for the dead on All Souls' Day. It is not likely, I think, that this crypt would be appropriated to any other purposes, until the original uses had died out—possibly not before (or much before) the time of the Reformation. I do not think that there were any very remarkable circumstances connected with the deposit of these bones. Had there been, surely some record or tradition would have remained to us. The number is not twice that of the existing population of Rothwell, and not greater than (nor perhaps differing materially in character from) the bones which might be exhumed from any well-filled churchyard, the soil of which was adapted for their preservation. I do not think that the crypt has been used as an ordinary charnel-house, in which the bones have gradually accumulated; or it would probably have been continued in that use until now. I think that we are warranted in the conclusion that the bones have been all deposited at once, and the place then walled up; and I would suggest, as the most rational way to account for all the facts, that some perhaps old and unused burial-ground, or some portion of the existing burial-ground, being required for other purposes, was cleared of its human remains, which, with reverential regard, were here carefully bestowed, in this consecrated receptacle, which was ready at hand, and which had outlasted its ancient uses."

CHURCH, CHAPEL, SCHOOL, AND OTHER BUILDINGS.

BRISTOL.—The committee of the Bristol Diocesan Architectural Society have reported very favourably of the designs for the proposed district church of St. Martin's parish. The Church Extension Society of that town have granted £100 towards the project. Mr. W. J. Hopkins is the architect.

ROMAN CATHOLIC CHURCH, ST. LAWRENCE O'TOOLE.—The completion of the tower, and erection of a spire thereon, in connection with the Roman Catholic Church of St. Lawrence O'Toole, are being proceeded with. The spire will be a broach, and have two rows of spire lights, with a gilt cross at its summit, which will attain an altitude of about 200 ft. above ground line. Mr. John Bourke is the architect, and Messrs. Murphy and Son are the contractors.

ST. MARY'S CHURCH, WHITTLESEY.—This church, which has lately undergone considerable improvements, was re-opened for divine service on Wednesday week. All the stone work has been scraped, which brings out the beautiful masonry to great advantage, and shows off the noble arches and pillars to that beauty for which they were originally designed. The reading desk and pulpit are of oak, built and beautifully carved by Messrs. Ruddle and Thompson, builders, of Peterborough, and are allowed to be of a very high class. The late Sir Harry Smith's memorial chapel adds greatly to the beauty of the church, in which is erected a very splendid marble monument, surmounted with a life-size bust of the gallant General, and a very appropriate inscription.

NEW SCHOOL AND CHAPEL, UPPINGHAM.—The tender of Messrs. Halliday and Cave, of Greetham and Oakham, has been accepted for the new school and chapel at Uppingham, and the work of demolition has already been commenced. The architect is Mr. Geo. E. Street, of London. The buildings will be very handsome and substantial, in the decorated style.

On Tuesday week, a Wesleyan day-school was opened at Crewe. The edifice is in the Gothic style, and cost, including £200 for land, £1,316 4s. 7d., towards which Government gave £359 10s.

On Wednesday week a new school and school-house was opened at Coombe, the site of which, as well as the greater part of the material required for the school, were given by the Provost and Fellows of King's College, Cambridge.

BEDMINSTER.—A plain and substantial school-room is about to be erected for the new church of St. Luke's, Bedminster, Bristol. The foundation stone is to be laid on Thursday, the 3rd of July.

The foundation stone of a new Wesleyan chapel was laid on Tuesday

last, at Middlesborough. The cost of the building is to be £4,400, and will be a mixture of various styles of architecture, the Byzantine predominating.

DRIFFIELD.—A new Baptist chapel was opened on Wednesday week, at Driffield, Yorkshire. Mr. Haw, of Beverley, was the architect.

DAWLISH, DEVON.—A private chapel was opened on Tuesday week at Luscombe Park, near Dawlish, the seat of P. Hoare, Esq., for the use of his family and the tenantry on his estate. Mr. Scott, of London, was the architect, and the edifice is built in the transition style. In the building of the apse, nave, and aisle, three different descriptions of stone have been used—viz., Bath, Stoke, and Mansfield. The arcade is constructed of coloured stone and Devonshire marble, the latter being highly polished. The ceiling springs from pillars of native and beautifully polished marble. The windows are of richly stained glass. Those in the chancel represent various scenes in the life of our Lord up to the period of His ascension. The other windows are filled with various Saints and Apostles. To each of the windows are two beautifully variegated marble pillars, with elaborately carved capitals. The paving of the upper altar is tastefully inlaid with Devonshire marble; and the lower altar, with the same marble, and Minton's ornamental tiles. The steps of the altar are likewise of the same, the whole presenting a rich colour. The nave and aisle are paved with black and red quarry stone laid to design. The whole of the carving work has been admirably executed. The seats, which are very superior to the ordinary pattern, are made of cedar, the principal part of which was grown on the estate. The doors are of the old oak style, and handsomely made. The exterior makes no pretension to architectural display.

The foundation stone of some new schools was laid on Wednesday week, at Prickwillen, Isle of Ely.

The corner stone of the new schools for the parish of Ravenstone, Buckinghamshire, was laid on Wednesday week.

The foundation stone of a new Wesleyan chapel has been laid at Lowestoft. The edifice is in the Italian style, and will cost, with the site, over £3,000, and it will seat 1,200 persons.

THE RESTORATION OF THE CHANCEL OF THE COLLEGIATE CHURCH, WOLVERHAMPTON.—Five tenders have been received for the rebuilding of the chancel of this fine old church, in accordance with the restoration of the nave and transepts after the designs of Mr. Christian, and that of Messrs. Higham, of Wolverhampton, has been accepted. The amount of the tender is £3,295 without, and £4,025 with an apse. The total cost will exceed this, however. The committee have already obtained £3,800, of which the Duke of Cleveland, as lay impropiator, and the Ecclesiastical Commissioners contribute £1,000 each. The present chancel was erected subsequent to the rest of the church, and with which it is in striking discordance.

DOWN CATHEDRAL.—The alterations and improvements at present going on in Down Cathedral are progressing with much rapidity.

SWANSEA.—On Whit Monday, the foundation stone was laid of the new mission chapel, Quarry Street, Swansea.

WHITECHURCH.—On Monday last, the foundation stone was laid of the new Wesleyan day and Sabbath schools at Whitechurch.

NEW IRON CHAPEL AT THE EXHIBITION.—Several gentlemen of different denominations have raised £500 or £600, with which a site has been purchased immediately adjoining the stand for the sale of Bibles of different languages, opposite the Exhibition. A neat little iron chapel has been erected, which was opened on Tuesday for divine worship. The site cost £180; the building about £400 more; and the edifice will hold about two or three hundred persons.

ST. MARTIN, BLADON, OXFORDSHIRE.—This remodelling of a modern church is by Mr. C. Buckridge, of Oxford. The present building is a mere conventicle, built by the Duke of Marlborough. The chancel, and a south aisle, to its western half, are new, as also is the arcade between the nave and its south aisle. A new north-western porch is added; and the windows, buttresses, &c., of the remaining part of the fabric, have been renewed. The internal arrangements are excellent. The style is a very early pointed. The arcade is of three arches, rising from comparatively lofty cylindrical shafts. The chancel arch has corbelled shafts. The east window is an unequal triplet of tall lancets, under hood-moulds, and set on a tilted horizontal string-course. The tower is a little too low, the belfry-stage not rising clear above the crest of the nave roof. The said belfry-stage has two light pointed windows, separated by a shaft, with a trefoiled circle in the head. The tower is capped by a low, octagonal, broached, shingled spire. Inside we may notice with commendation the high level of the eastern triplet (which is shafted internally), leaving room for a good reredos over the altar; with curtains on each side, against the east wall. The reredos is to be of alabaster, with incised ornaments, filled with coloured cerements.

DURHAM CATHEDRAL.—The restoration of the chapel of the Nine Altars is now in full progress, under the direction of Messrs. Walton and Robson. All the old shafts of fossil marble (some containing remarkable madrepores) are being repolished by machinery; and where this cannot be done without lessening their diameter, or where shafts are entirely wanting, these are to be renewed. The marble contract alone is taken at £1,000, irrespective of scaffolding. Broken vases will be carefully restored, ruinous neckings to caps inserted in stone, *sculpture untouched*, although very much mutilated. Whitewash will be removed by potash-water and Manchester card. In fact, this noble specimen of thirteenth century work will be cleared of the defilements which have so long disgraced it, and its great beauty brought to light.—*Ecclesiologist* for June.

AN ENGLISH CHURCH IN NAPLES.—A church in connection with the English establishment is about to be erected in Naples. One of the acts of Garibaldi, when Dictator in Naples, in 1860, was to present to the British residents a valuable piece of ground, most conveniently situated in the best part of the city, as the site for an Anglican Protestant church—a circumstance which derives all the more interest from the fact that under the late Government English Protestants were forbidden to worship except in a room, and that room in the Consul's residence. The British community at Naples are attempting to raise a sum of at least £5,000, which will include church, schools, teacher's house, and parsonage. The church is to cost £4,000, and to contain 600 sittings. About £1,500 has been contributed in Naples and £800 in England. The British Government, by the terms of the Consular Act, is empowered to meet whatever sum is collected upon the spot by an equivalent grant.

ST. PAUL'S CHURCH, BEDMINSTER.—The interior of this sacred edifice is, we understand, undergoing a course of repainting and decoration, at the sole expense of Mr. Daines, the senior churchwarden, and will be completed towards the end of the present month.

CLIPSTONE BAPTIST CHAPEL, NORTHAMPTONSHIRE.—This chapel has recently undergone considerable improvements, under the superintendence of Mr. E. F. Law, architect, Northampton, at a cost of £450.

ARCHITECTURAL ASSOCIATION.

A MEETING of this body was held at the rooms, 9 Conduit Street, Regent Street, on Friday evening; Mr. THOMAS BLASHILL, V.P., in the chair.

New Member.—Mr. Robert H. Burdon, Berners Street, Oxford Street, was unanimously elected a member of the Association.

Professional Practice and Charges.—Mr. PARAKE moved that the honorary secretary be requested to apply for an official copy of the document recently agreed to by the Royal Institute of British Architects, relating to professional practice and charges of architects.—Mr. T. ROGER SMITH seconded the motion, which was unanimously agreed to.

Visits to Old Buildings.—Mr. R. O. HARRIS thought it would be well if they could organise a scheme for visiting, during the summer, several of the old buildings in London and the neighbourhood, such as Westminster Abbey, St. Paul's, and St. Alban's Cathedral, the members of the Association being headed by some gentleman well known for his information and interest taken in the objects visited. Such visits would be very profitable, and at the same time form the subject of interesting study.

The CHAIRMAN thought the suggestion a most excellent one.—Mr. T. ROGER SMITH thought they might make some arrangement on the subject before the next meeting.—Mr. C. H. F. LEWES said, that in order that all the members of the Association should have the privilege of paying such visits as those proposed, all the offices should close at 2 o'clock on Saturday, which was not the case at present. It was then agreed to, that arrangements for a visit to Westminster Abbey should be made before the next meeting.

Donations.—Mr. C. H. F. LEWES announced several donations to the library; and it was stated that information had been received from one of the honorary secretaries of the Institute of British Architects, that it was the intention of that body to present the Association with a number of duplicate books, which could be spared from the library of the Institute.

Proposed Architectural Alliance.—Mr. T. ROGER SMITH moved the following resolution:—"That this Association send a deputation, as requested, to attend a meeting of delegates who are summoned to deliberate upon the proposal for an Architectural Alliance, but that the delegates be not empowered either to grant or refuse the adherence of the Association to the proposed alliance, the Association declining to come to any decision on this point, until after receiving a report from the deputation."—Mr. PARAKE seconded the motion, which, after a long discussion, was agreed to. The first meeting of delegates takes place in London on the first of July. The following gentlemen were appointed the delegates from the Association:—The President of the institution, *ex officio*; and Messrs. T. Roger Smith, A. W. Blomfield, M.A., and J. A. Bunker.

Nomination of Office-bearers for the ensuing Year.—The following gentlemen were nominated as office-bearers for the next year, and they will be balloted for at the next meeting. *President*, Thomas Blashill; *Vice-President*, R. Norman Shaw.

Ordinary Members of Committee.—A. W. Blomfield, M.A., J. A. Bunker, R. Walker, R. P. Spiers, W. Paris, W. Gritten, Jun., C. H. F. Lewes, G. B. New, E. J. Tarver, T. Brown, J. Clarkson, E. L. Paraire, — Hendry. — Molecy, T. Goodman, and C. N. Beasley.

Honorary Treasurer.—Charles J. Adams.

Honorary Solicitor.—Francis Truefitt.

Auditors.—J. W. Penfold, J. M. Rickman.

Curators.—C. H. F. Lewes, and J. W. Walter.

Honorary Secretaries.—Charles J. Adams, and H. Attwood Reeves.

PLOUGHMEN'S COTTAGES AT SAUGHTON MAINS, NEAR EDINBURGH.

WE had the pleasure of examining, a short time since, a row of four new and improved cottages for ploughmen, on the farm of Mr. Dickson, of Saughton Mains. They occupy a slightly elevated position above the road leading past the farm towards Corstorphine; and when the hedge at present in front is removed, and the slope down to the road neatly laid with

gravel, as Mr. Dickson proposes, the cottages, with their neat and substantial stone fronts and blue slated roofs, will have a pleasant and comfortable appearance. Each tenement has four apartments in addition to a store-room, which is about 5 ft. 6 in. by 3 ft., and lighted by a window 4 ft. high, and 1 foot 6 in. wide.

When you enter the outer door, which is 3 ft. 6 in. wide, you find yourself in a lobby, 4 ft. by 5½ ft. or so. On your right is the door leading into the kitchen, an apartment of 14½ ft. in length by 11½ ft. in breadth, and floored with tiles. It is well lighted by a window 3 ft. wide by 4 ft. 6 in. high, made to open in the centre. The fireplace is nearly in the centre of the east wall of the kitchen, and there is a snug nook for the gudemans chair on the left of the fireplace. Almost opposite the kitchen fire is the door opening into the room, which is 14 ft. long by 7½ ft. wide. The fireplace occupies a corner near the window, and which is 2½ ft. broad, with a height of 4 ft. The floor is boarded, and with a fire the place must be exceedingly cosy, and even without a fire the heat from the kitchen will prevent its ever becoming chilly.

The other two apartments are smaller—they are light bed-closets, indeed, with plenty of space to move in, and room for a small table in the recess of the window. The dimensions of each are 8 ft. 2 in. by 6 ft., and each is lighted by a window 1½ ft. wide by 4 ft. high. Both open from the kitchen, and are fitted up with iron bedsteads. The floors of these rooms are also boarded. All the windows are made to open, and thus a fine current of fresh air can be made to play through the apartments at any time, without the door being opened. The rooms are also supplied with wooden shutters.

The kitchen and large room are each fitted with grates, adapted to their respective needs, and all the walls and ceilings are lathed and plastered. The height of the rooms to the ceiling will be about 9 ft.

Mr. Dickson has contrived to get rid of the offensive appearance usually presented by coal-cellar, privies, &c., in a way at once effective and artistic. Joined to the end cottage there is a wall, whose broken outline imparts to it a kind of fortress-like character. Behind this is concealed, not dandy ordnance pieces and piles of cannon balls, but the outhouses—unseemly to the eye, though essentially necessary to domestic life. This wall is about 10 feet high, the effective depression in the centre being about 1 ft. 2 in. in depth.

The coal cellars are each 8½ ft. by 5 ft.; the ashpits 5 ft. 4 in. by 4 ft. 7 in.; and the privies 5 ft. by 3 ft. The outside walls of the cottages are 2 ft. in thickness, and 9 ft. 2 in. in height. The slope from eave to ridge is 8 ft.; and the highest of the chimney stalks 3 ft. above ridge.

The total cost of each cottage, everything included, was about £110 to £115.

NEW FREE CHURCH AT PENICUIK, NEAR EDINBURGH.

BUILDING operations have just been commenced in the erection of the above church; it is to be erected at the south end of the town, on the road from the railway station, and is designed by Mr. Frederick Pilkington, architect, of Edinburgh. The new church will add another conspicuous feature to the architecture of the town. The tower and spire are to rise to the height of 100 feet. The spire will be slated, and will have coronals of ornamental iron-work at the foot, and also at the four spire-lights. The tower is plain till it rises to the top story, which is octagonal, with pinnacles and decorative windows alternately on the faces. The object of confining the ornament to the highest part of the tower, is becoming more and more appreciated by architects, as it obviously gives a greater appearance, and indeed reality, of solidity to the structure, and places the ornament where it is best seen.

The principal entrance to the church is through the tower, by a massive archway, the staircase to the gallery being also in the tower. The lower part of the end of the church is an open arcade of four arches, with columns and carved capitals instead of mullions, the upper part of the gables being occupied by a large five-light window, with plate tracery. The middle part of the tracery is a six-foil light, richly carved, and surrounded with smaller lights, composed of cinquefoils, quatrefoils, and trefoils.

The two sides are occupied by three coupled two-light windows, and the end is penetrated by a large window of a spherical triangular form, with three larger and three smaller circles, converging to a centre, consisting of a double triangle, pierced and foliated. The session-house is placed at the rear of the church, and the chimney, so often put out of sight as a blemish, is taken advantage of so as to enhance the architectural effect of the building. The height of the church, to the ridge of the roof, is fifty-two feet. The roof is constructed in two slopes, the break being occupied by an ornamental ventilator, running all round the church. The entrances to the church are so arranged that the congregation enters by one door, and exit can be obtained by four doors. The interior is fan-shaped; this secures the obvious advantages both of better hearing and better seeing of the preacher, objects not always studied to the extent they deserve in Presbyterian places of worship.

The gallery, which is seated for 150, is confined to the end of the church, opposite the pulpit; the seats are all to be open with carved ends, and sloped at a comfortable angle. The roof will be of open timber-work, simple, but effective.

The estimated cost of the whole structure is £2,050, and the church is expected to be ready in the course of next year. The contractors for the works are Mr. Thomson, mason, and Mr. Tait, wright, these being the chief contractors, all of Penicuik.

GENERAL ITEMS.

CUPAR CORN EXCHANGE.—In 1859 a movement for the erection of the above was originated. The foundation was laid in August, 1861, with Masonic honours. The design has been prepared by Mr. Campbell Douglas, architect, of Glasgow. The building, when finished, will be a neat and elegant edifice of the gothic style. The entrance porch, the only part exposed to view from the street, is to be surmounted with a light and handsome spire, rising to the height of one hundred feet, while the side next to the school-hill is splendidly relieved by a range of dormer windows. The interior of the building will display an equal amount of good taste and design, having the appearance of a beautifully proportioned hall, of the size of ninety feet long by fifty wide, with a circular roof of about forty-five feet in height at the greatest altitude, and supported by cast-iron girders, spanning the whole width. The building will be lighted by a double range of windows in the roof from end to end, and at night by three large and powerful sunlights, with which is connected an apparatus for ventilation. At the north end of the hall ample accommodation is provided for the business of the Exchange, in the way of committee and sitting rooms; and at the entrance there is a ladies' ante-room, and orchestra above, in the event of the hall being used as an Assembly or Concert room. The stalls are all constructed so as to be removed at will, in order to their being used as supports for the flooring of the orchestra, and accommodation is also provided for the storage of the whole seating in the hall, so that the area may be left perfectly free for the purposes of the markets. The estimated cost of the whole is 4000*l.*; and it is expected that the buildings will be finished and opened this year.

COURTENAY v. LANDER and BEDELLS.—A copy of the award made by Wm. Cole Beasley, Esq., of the Inner Temple, has been received by us, and we are enabled to say that the adjudication is in favour of the defendants, the Rev. Anthony L. Courtenay having to pay the costs on both sides. It will be a source of gratification to the profession generally to know that in the only two cases of importance of which there is record of actions brought against architects—viz. that of the *Middlesex Magistrates v. Dankes*, and the present action—both have issued in the entire exoneration of the members of the profession from the charges made against them.

THE MEMORIAL TO PRINCE ALBERT, ABERDEEN.—We believe, says the *Aberdeen Herald*, the committee have had one or two meetings on the subject, both of the form of the statue and the artist to whose hands it is to be assigned. It is said that Baron Marochetti has been selected, subject to Her Majesty's approval. We hope this is true, as such a decision would, we think, give general satisfaction. Marochetti is a sculptor whose works do not deserve unqualified approval, as we need go no further to see than the right fore-leg of King Richard's horse in front of the Houses of Parliament; but he has the great faculty of expressing power and dignity with simplicity and grace, and such a power is not the common gift of all who practise the plastic arts with success. The statue is proposed, we believe, to be of bronze; and the site suggested is on the wooded declivity of Union Terrace, adjacent to Union Bridge.

REMOVAL OF ST. THOMAS'S HOSPITAL.—After a very long and severe contest with the authorities of the South-Eastern Railway the governors of the hospital have at length come to a resolution by which it will be relieved from the dangers which would probably be encountered by the patients from exposure to the noises necessarily incidental to close proximity to such railway stations as the South-Eastern and London and Brighton. Camberwell, Brixton, Streatham, and various other places have been named from time to time as eligible sites for the hospital, while, on the other hand, it has been warmly contended that, if at all practicable, a metropolitan site should be secured. The authorities of the hospital, after diligent search and anxious inquiries, have at length been able to adopt a course which it may be hoped will prove satisfactory to all parties concerned. The Royal Surrey Gardens, situate in Walworth, and about a mile and a quarter from the three great metropolitan bridges (London, Blackfriars, and Westminster), will in the course of a very short time be the spot on which the new hospital will be erected. All the arrangements for the purchase money have been made, and the usual amount of deposit lodged. It will be, of course, some little time before the ground can be cleared and the new building raised, but there will be no unnecessary delay, and in the course of a few months the patients will be in a position to be removed. The site now occupied by the hospital will then be devoted to the purposes of the South-Eastern Railway Company.

A PUBLIC PARK FOR BARNSELY.—About twelve months since Mrs. Joseph Locke, widow of the eminent engineer, in order to mark the connection of her husband with the town of Barnsley, in addition to giving £2,000 for the foundation of scholarships in the Grammar School, and £1,000 in aid of the Catholic schools, offered to present the town with a park, if a suitable site could be found. In accordance with that desire she caused a piece of ground, about 17 acres in extent, close to the town, to be purchased and laid out. The whole has been enclosed, and now forms a magnificent recreation ground. Provision has been made for cricket-playing, bowling, and a variety of other games. On Whit-Monday the ground was handed over to the Board of Health, as the representatives of the town. The shops, without exception, were closed, and every street and lane was profusely decorated with flags and streamers. The sight was most picturesque, more especially in the principal streets, where almost every house had hung out a banner.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—An ordinary general meeting of this body will be held on Monday next, when Mr. Arthur Ashpitel, V.P., will read a paper entitled "On some of the Architectural Drawings in the Royal Library at Windsor, exhibited by command of His late Royal Highness the Prince Consort, by B. B. Woodward, Esq." At the same meeting Mr. E. Welby Pugin, of 14 Buckingham Street, Adelphi, will be balloted for as a Fellow of the Institute.

ANNUAL DINNER OF THE ARCHITECTURAL ASSOCIATION.—The annual dinner of this body took place at the Whittington Club, Arundel Street, Strand, on Tuesday evening, when a large number of the members of the Association were present. The chair was occupied by the President of the Association, Mr. A. W. Blomfield, M.A., and the vice-chair by Mr. Thomas Blashill, the Vice-President. The usual loyal and patriotic toasts having been disposed of, the CHAIRMAN gave the toast of the evening—"Success to the Architectural Association"—which was drunk with the greatest enthusiasm. Mr. Blashill responded; after which a vote of thanks was passed by acclamation to the outgoing office-bearers for their services during their year of office. The dinner and wines gave the utmost satisfaction, and a very pleasant evening was spent by the company.

IMPROVEMENTS IN PARIS.—The improvements now being made in the north-western portion of the Quartier Rochechouart are rapidly approaching their termination. The new street to the left of the Abbatoir Montmartre is nearly finished, and many houses are in course of erection to the south of the Avenue Trudaine, on the site of the old gasworks, where the Rue Bochart-de-Saron is to meet the Rue de Laval, about to be prolonged to the Rue Rodier. But those works are trifles compared with the turning of the course of the Aqueduc de Ceinture, now in progress, from the Rue de Dunkerque to the Rue des Martyrs. This alteration is rendered necessary by the direction of the new streets. The aqueduct will be open from the Rue de Laval to the Avenue Trudaine, from which point it will be tunnelled, at a depth of fifteen metres below the surface, and ten shafts have already been sunk. This aqueduct, one of the principal aquatic arteries of the capital, is 4,033 metres in length, extending from the Canal de l'Oureq to the reservoir at the top of the Rue du Rocher, near the old Barrière de Monceaux. From different points of it mains are carried to the Faubourg St. Antoine, across the Pont d'Austerlitz to the reservoir of the Rue St. Victor, near the Jardin des Plantes; to the Château d'Eau, and across the Marais and the Ponts Marie and de la Tournelle to the left bank; others by the Ponts-au-Change and St. Michel to the reservoir in the Rue Racine; by the Palais Royal and Rue du Bac to the reservoir in the Rue de Valenciennes; also to the Place de la Concorde and the Champs-Élysées.

THE SKELETON OF RICHARD III. has been discovered at Bow Bridge, Leicester—at least so say some of the antiquarians of that town. Tradition and history both relate that the remains of Richard III., when taken up from their grave in the Church of the Grey Friars, Leicester, were carried away by the multitude, and thrown over the Bow Bridge into the river. The bones recently found, however, bear not the slightest resemblance of having been struck or fractured, whereas Richard's body was "hacked to pieces." Richard died at the age of 35, and the bones discovered are stated to be those of a man apparently 30 years of age.

SCARBOROUGH PIER AND IMPROVEMENT COMPANY.—The proposed beautiful public works in Scarborough, "the Queen" of the watering places, are likely to be speedily commenced, as they have received the unanimous support of a great public meeting in that romantic and popular town. When we consider that Scarborough has increased 50 per cent., from 1851 to 1861; that the visitors last season numbered 300,000; that the engineer, Mr. T. Page, C.E., is the most eminent member of his profession; and that the consulting manager, Mr. W. Northhouse, has the prestige of success from the many great companies he has organised, there can be but little doubt that the shares in this will be eagerly sought for.—*Mining Journal*.

ORMEAN BRIDGE, BELFAST.—The works at the Ormeau Bridge, Belfast, are being rapidly pushed forward; all the arches are keyed, and two of the centres struck. There are four segmental arches, each of 45 ft. span, and with nine feet rise; the abutments and piers being 22 ft. high. An embankment has been thrown up out of the old river bed, and encloses the entire site of the new bridge, and a large area besides, which is kept dry by a steam pump. The cutting and filling required to form the new approaches are also in a forward state, and when finished will be a great improvement on the old steep descent of one in 20, but now reduced to one in 60, the width being also increased from 30 to 50 ft., or 42 ft. between the parapets. The stone forming the abutments, piers, and sheeting of arches, is from the county Down quarries, within five miles of the structure; that used for the front arch stones (*voussoirs*) being from the county Tyrone. Messrs. Lanyon and Smyth are the engineers, and Messrs. Connor, McLaughlin, and Harvey, the contractors; and Mr. N. Berry the superintendent, on the part of the Board of Public Works.

THE EMPEROR NAPOLEON AND HIS FATHER'S TOMB.—Different circumstances had prevented the Emperor from visiting the tomb which he had commanded in the Church of Napoléon-Saint-Leu (Seine-et-Marne) for his father, the King of Holland, who had possessed an estate in the neighbourhood, and who was at his own desire interred in the church. Having learnt that M. Petitot, the artist charged with the execution of the statuary, had before his death, which took place recently, expressed regret that the Emperor had not, by personal inspection, satisfied himself as to whether the artist had justified the confidence placed in him, His Majesty, three mornings back, left Paris for Saint-Leu to visit the monument. Being pleased with the execution of the work, His Majesty granted a sum of 10,000*fr.* for

the decoration of the interior of the church, and left 1,000*l.* with the mayor to be applied to charitable purposes. His Majesty afterwards visited the remains of the chateau formerly inhabited by his father.

NEWBURY.—The new Corn Exchange here was opened on Thursday week. The cost of the building is £6,500. Mr. Dodd, of Reading, is the architect, and his design is in the Italian style, varied in front by pilasters and ante-pilasters of the Corinthian style. Nearly half the roof is covered with glass, and the interior is extremely light and graceful. The dimensions of the building are: 160 feet long, 50 feet wide, and 50 feet high. Mr. Fletcher, of Salisbury, was the principal contractor; the other contractors being Messrs. Wilder and Sons, of Reading; J. and H. Hopson and S. Biddis, of Newbury.

SYDNEY.—We find from the Australian papers that considerable progress is being made with the tower of the Sydney University, which was left unfinished at the time the first portion of the building was erected. The tower when completed will much resemble that of Eton College, having a clock face on each side, and four ornamental turrets with spires. On the University enclosure the new Roman Catholic College of St. John is being erected, and it is in an advanced state. A new wing to the Australian Museum at Sydney is also in process of erection. The walls are up to the window-sills at one end, and ready for the base course at the other. Considerable alterations and additions are being made to the School of Arts. The framework for the roof of the new portion is completed, and all will be finished by the end of June. Many other architectural and engineering works are in progress in various parts of the colony; but further reference to them must be reserved for the present.

METROPOLITAN BOARD OF WORKS.—At the last meeting of this body, Mr. CARPMAEL, in the chair, Mr. BAZALGETTE, Engineer-in-Chief of the Board, reported as follows, respecting the progress and cost of the Main Drainage Works:—"This being the month for the preparation of the report on the works executed by the Board during the past year, it may not be considered necessary now to enter into details of the works constructed in the last month so fully as is usual on ordinary occasions. I, therefore, beg to state briefly that the works generally progress satisfactorily. The value of the work executed on the Northern Outfall Sewer is about £290,000; on the Middle Level Sewer it is £130,000; and on the Ranelagh Storm Overflow, from £28,000 to £29,000. The Southern Outfall Sewer is completed, and the value of the work done on the Southern High Level Sewer is £163,000. On Mr. Pearson's contract, work of the value of about £3,100 is finished, and of the value of about £78,000 on Messrs. Aird's contract for the Deptford Pumping Station."—The Committee under the Sale of Gas Acts submitted plans and specification for the Gas-Meter Testing House, in Wheeler Street, Spitalfields; and recommended that advertisements be issued, inviting tenders for the execution of the works. (Agreed to.)

ANCIENT GUESTEN HALL, WORCESTER.—Owing to the strong feeling evinced by the public for the preservation of these ruins, their destruction has been suspended, and not only so, but the tracery which belonged to the only perfect window, and which was first pulled down, has been rebuilt on the ruins of another. The question of its final demolition will be considered by the Dean and Chapter at their next meeting.

NEW BRIDGE OVER THE RIVER SEVERN.—At an influential meeting held on Friday afternoon, at Hampton's Load, near Bridgnorth, Mr. Heap, representative of Messrs. Harrison, of the Canada Works, Birkenhead, produced a plan of a wrought-iron lattice superstructure, the total length being 178 ft., or four spans of 40 ft., with a roadway of the width of 15 ft.; and a resolution was then proposed and carried that a Bridge Company should be formed, with a capital of £5,000, in 500 shares of £10 each, with a deposit of 10*s.* a share.

NEW TOWN HALL, PRESTON.—The invitation to the Prince of Wales to lay the foundation stone of the new Town Hall in Preston, during the celebration of the Guild, has been declined. In a letter from the Hon. C. B. Phipps to the Mayor, it is said that it is Her Majesty's wish that none of the Royal children should, during the present year, attend any public ceremony.

THE VICTORIA DRINKING FOUNTAIN.—The beautiful fountain erected for public use in the second enclosure of Victoria Park, at an expense of several thousand pounds, by Miss Burdett Coutts, is now completed. It is an octagonal temple, with a diameter at the base of 40 feet 9 inches, constructed of Portland and Kentish ragstone. The eight flights of steps which lead to the drinking basins are of Gazeley stone from Yorkshire; the eight piers and the shafts are of red Peterhead, and the bases and pedestals of gray Aberdeen granite, highly polished. These support beautifully-wrought arches, which again bear the cupola, the ashlar moulded work and carving being of Aubigny stone from Normandy. A four-faced clock is placed in the cupola, which terminates in a vase representing the figure of a mermaid. A door is placed in the shaft of the fountain, facing the north; above it is carved the coat of arms of Miss Burdett Coutts, over which again are two inscriptions, one the title of the fountain—namely, "The Victoria Fountain," the other containing the words "The earth is the Lord's, and all that therein is." There are four niches, in which are placed figures of Cupids (carved in Sicilian marble) on dolphins, and bearing pitchers, from which the water flows into the basins, which are of polished Aberdeen granite. These are supplied with cups bearing the following words:—"Temperance is a bridle of gold." The panels round the fountain are of Emperor's red marble from Portugal, and gray Connemara

marble. There are also monograms of the name of the giver, and coloured marble ribands. Round the fountain runs this inscription—"Given, Anno Domini 1862, by Angela Georgina Burdett Coutts," and "For the love of God and country." The total height of the fountain is 58 ft. 7½ in. The ground round the erection is tastefully laid out in parterres, with vases of terra-cotta from Grantham. The architect is Mr. Darbishire, and the builders Messrs. Smith, of Pimlico.

THE FOUNTAINS IN TRAFALGAR SQUARE.—The *Observer* says:—"The water is supplied to the fountains from the water-works in Orange Street, which were constructed by Messrs. Easton and Amos, in 1844, and is pumped up into a tank about 40 feet above the pavement of the square, from whence it flows to the two fountains, and the waste or overflow is conveyed back to a catch well, sunk underneath the engine. It is then pumped, by means of an Appold centrifugal pump, into the tank, and then passes over and over again. In its passage it is made use of to supply the condenser of the large 60-horse pumping-engine, so that not only does the water for supplying the fountains cost nothing, but it is actually made the means of economising fuel, by enabling the adoption of a condensing instead of a high-pressure engine, for the purpose of pumping the water from the artesian wells, for the supply of the different public offices. The quantity of water which was used in the fountains before the present alteration was from 400 to 500 gallons per minute; the Appold pump is arranged to lift from 1,200 to 1,400 gallons per minute—thus affording sufficient for the increased number of jets. The wells from which the supply of water is in the first instance derived are two in number: one, at the back of the National Gallery, is 300 feet in depth, and the second, in the enclosure immediately in front of the National Gallery, is 383 feet in depth. A tunnel, about 6 feet in diameter, and 400 feet long, connects the two wells. The water, although obtained from an artesian well, does not rise to the surface, and an engine, of about 60-horse power, is required to raise the water from about 90 feet below the surface. The steam-engine has two cylinders, the larger being 35 inches in diameter, with a length of stroke of 6 feet; and the smaller one, 22 inches in diameter, with a length of stroke of 4 feet. It works one double-acting pump, 13½ inches in diameter, with a length of stroke of 3 feet, for the supply to the fountains, and two 18-inch pumps, with a length of stroke of 20½ inches, for raising water from the springs into the tanks above the building. At an average speed of 16 strokes per minute, the fountain pump throws about 660 gallons, and the two spring pumps together 600 gallons per minute. In 1852 the tank tower was raised 20 feet, for the purpose of giving a better supply, at high service, to the upper tanks, in the river front of the Houses of Parliament. The pumping of 600 gallons per minute, equal to 432,000 gallons in 12 hours, lowers the water between 20 and 24 feet; it then remains stationary, as long as the engine is kept working. The height to which the water will stand, when at a state of rest, varies in wet and dry seasons; but the head does not appear to be gradually lowering. The cost of the works, as completed in 1844, was £8,392; the annual working expense is £492; but the water supplied to the various public offices, at the rates previously paid, amounts to £904 a year. The Houses of Parliament, the Admiralty, the offices in Downing Street, and twenty-eight public offices in all, are supplied from this source. Up to the present time, the fountains in Trafalgar Square have consisted only of a single jet, falling over from an upper and lower basin. This will still remain, as the centre figure of the basins; but at each of the semicircular bays there is now a group of jets, consisting of a centre and 16 surrounding it. The jet of water from the centre rises about 5 feet, and those in the outside 4 feet. There are, therefore, in the first instance, 68 jets, throwing 300 gallons per minute, rising from the surface of the basin. The ground plan of the basins is a square, the sides of which are about 68 feet long, and semicircular bays project from each of these sides. In the latter, as we have stated, are the circular group of jets. An outline of an octagon is formed within the square; and at each of the angles is a jet, which throws the water inwards, to a height of 20 feet, and into the upper basin of the central fountain. These eight jets throw 200 gallons per minute, and their curve is about 30 feet in length. There are, again, two inferior squares, surrounding the central group, and from each of these angles a jet is thrown outwards, crossing those from the octagon, rising to the height of 25 feet, and curving about 17 feet. These throw altogether 200 gallons per minute. Beyond the sides of these smaller squares are 8 feather jets, which throw up 200 gallons per minute, each of the groups of jets forming a display resembling the Prince of Wales' feathers. The whole of these may be played at once or together, in not less than twenty-five different continuations or changes."

THE ETRUSCAN TOMBS.—The opening of the Musée Napoléon III. has afforded M. Noel Desvergers, a well-known antiquary, an opportunity of discussing the merits of the precious objects therein contained, in an article published by the *Revue Contemporaine*. As M. Desvergers has himself been an active excavator, his description of the manner in which the Etruscans built their tombs presents particular interest. Our author states that, after pursuing his excavations for the space of seven years in the Tuscan territory, he at length reached the Pontifical frontier in the neighbourhood of Vulci, the necropolis of which had been ransacked by other archaeologists for upwards of thirty years, and filled the museums of Europe with innumerable treasures. It scarcely seemed likely, therefore, that anything more should remain worth taking on a soil which had already yielded so much. Nevertheless, M. François, an experienced explorer of tombs, was of a different opinion. Seeing that the sepulchres explored were all situated at a very insignificant depth, and not remarkable for

any great decorations, he concluded that lower down there must be much richer and larger tombs. After some researches he informed M. Desvergers that on the embankment of Fiora, at an altitude of 90 ft. above the river, he had bored the ground, and found an artificial grotto presenting none of the characteristics of a sepulchre, and which was therefore most probably intended to protect a more important crypt from the effects of infiltration. A shaft was therefore sunk to the depth of 36 ft. below the surface, when a subterranean passage was discovered 9 ft. in breadth, and at the entrance of which there stood a cippus, two sides of which displayed long Etruscan inscriptions. This passage, 99 ft. long, being cleared, the pioneers at length arrived at the door of the hypogeum. No trace of any previous visit was perceptible, and the tomb appeared to be one of some powerful lucumon, or chief, judging from the length of the passage, the importance of the cippus at the entrance, and the precautions taken for the preservation of the crypt. When the first gleam of light from their torches revealed the interior to mortal eyes for the first time after the lapse of twenty centuries they saw warriors clad in armour lying on their sarcophagi; the forms, the vestments, stuffs, and colours, remained visible for a few minutes, until the air from without, gradually penetrating into the crypt, effaced the whole. All that remained to the persevering explorers was the weapons, jewels, bones falling to dust, and a few threads of gold and silver which had been woven into their garments. The walls were, however, covered with paintings representing an episode of the *Iliad*, and of very superior execution, evidently pointing to the influence of Greek civilisation in Etruria. The crypt had eight entrances, all adorned with the peculiar Etruscan mouldings which Vitruvius calls *barycephala*, or top-heavy. The inscriptions were ascertained to be of a period anterior to that of the conquest of Etruria by the Romans. M. Desvergers therefore concludes that this tomb dated from the fourth century before our era. Some of the treasures of the Musée Napoleon III. belonged to this tomb.

WORKMEN'S HOUSES IN EDINBURGH.—The Metropolitan and Edinburgh Building Associations are each to build two rows of working-men's houses at the Dumbiedykes. Altogether, at this place, 200 houses will be erected, providing accommodation for nearly a thousand persons, young and old. It is the intention of the two associations to build comfortable and substantial houses, and to sell as many of them as possible to the working men themselves, so as to turn over their money quickly, and at once proceed to extend their operations.—*Review*.

STONE-PLANING MACHINE.—The *Dundee Courier and Argus* says:—"Hunter's stone-planing machine, which, we are told, shapes and dresses stones for building very effectively and cheaply, is growing into notice much more rapidly than it would have done if there had been no quarrel between the masons and their employers; and if the quarrel lasts much longer, the men may find that, to a great extent, their labour in one department has been superseded. We see, by an advertisement which has appeared in one of our columns, that a limited liability company, comprising some of the leading builders and quarrymen, has been established in Dundee for the purpose of buying and working one of these machines, and that a considerable profit is anticipated. We do not intend here to enter upon the vexed question as to how far the employment of machinery benefits or injures particular classes, or the whole community, but one thing, at all events, we may congratulate the masons on. We have heard a great deal lately of the unhealthiness of their occupation. The unhealthy part of it, we believe, is the dressing of the stone. If this machine answers the expectations which are formed of it, their work will be lessened, but what will remain will be less detrimental to life."

IMPERIAL HOTEL, GREAT MALVERN.—This hotel, the property of the Great Malvern Hotel Company, is now fast approaching completion, and will, it is believed, be ready for opening next month. It is built after the model of the Great Western Hotel at Paddington, and the style of the architecture is the Continental Gothic. The expense of the building, with its adjuncts of a bridge and covered way, will exceed £25,000. It is situated near to the Great Malvern Railway-station, on an eminence, and not far from the Barnard's Green Road. The architect is Mr. E. W. Elmslie. Mr. Thomas Perkins, builder, of Malvern, is the contractor, assisted by his nephew, Mr. Edwards. The building is composed of red brick, with Bath stone and Forest stone dressings, the roof, which forms a prominent feature in the design, being covered with green and purple slates. The difference in colour of the materials, the blue Forest stone and the white Bath stone, gives to the exterior an appearance both novel and pleasing. There are two principal fronts, the west and south. The exterior is very handsomely decorated. The two most prominent features besides those already mentioned, are the tower, about which there is some clever carving, and a beautiful oriel window over the chief entrance, forming the terminal of the corridors on the upper floor. This window is considered to be one of the most magnificent of its kind in England.

THE WELLS, GREAT MALVERN.—The Roman Catholic chapel is fast approaching completion. The Wells church is about to undergo a thorough renovation and repewing, and a spire to be erected on the tower.

SOCIETY FOR THE ENCOURAGEMENT OF THE FINE ARTS.—A conversation of this Society, the fifth of the season, was held under the most brilliant auspices at the Mansion House, on Wednesday evening, when the entire suite of rooms was, through the kindness of the Lord Mayor, who is Vice-President of the Society, thrown open to the visitors. The Egyptian Hall and other rooms were decorated with flowers, evergreens, &c., and also with oil and water colour paintings, and groups of statuary, lent

for the occasion by amateurs and others. This *reunion* was very numerously attended, there being present about 1,200 ladies and gentlemen, of whom a large number were foreigners, attired in various costumes. Amongst the distinguished strangers present were the President and ex-President of Liberia and suite, and several Indian princes and princesses. The Lord Mayor in the course of the evening briefly addressed the visitors, tendering to them a hearty welcome to the Mansion House, and speaking highly of the Society for the Encouragement of the Fine Arts, which he believed would one day be acknowledged as one of the most important and valuable institutions in the country. A concert followed, in which the principal performers were Madlle. Titiens, Madame Liebhart, Madame Honore, Miss Van Noorden, Madame Gilbert, Signor Giraltoni, Herr Reichardt, M. Naudin, Mr. Santley, M. Ascher, Mr. Henry Distin, &c. The conductors were M. Benedict, Mr. Alfred Gilbert, Signor Randegger, and Herr Ganz.

THE UNDERGROUND RAILWAY.—Considerable efforts are being made by the contractors for the formation of the above line of railway, to have it completed at the time proposed; and during the last fortnight much progress has been made towards carrying that object into effect. All the stations are progressing in a most satisfactory manner, and they will be shortly finished. There is only one portion of the line, between Paddington and Copple Row, Clerkenwell, in an incomplete state, and this is in the Marylebone Road, at the top of Gloucester Place, where a station is being formed. From Copple Row to the City terminus, hundreds of men are employed in the necessary excavations for continuing the open cutting to the intended station adjoining the Field Lane Ragged Schools; and the double line of tramway is laid within a short distance of the Sessions House, to carry the earth excavated to King's Cross, which is done by a steam-engine. Owing to the long days, the navvies are at work from an early hour in the morning.

CHIPS.

AN immense factory is now building on an extensive site of land situated on the river bank at East Greenwich, for the company recently formed to build boats by machinery, on the plan of an American inventor.

The Halifax Town Council have determined to invite the Prince of Wales to open the magnificent Town Hall erecting in that borough. October next is the time named for the event.

Mr. J. W. Malcolm, M.P., has announced his intention of erecting two commodious schoolrooms on his estate at Frith Ville, near Boston, for the education of the children of the neighbourhood.

Amongst the curiosities lately added to the Tower is a tablet of granite, on which is fixed a brass plate, stating that "On this spot Ann Boleyn (mother of Queen Elizabeth) was beheaded in 1536."

Up to the end of March last £375,000 had been expended on the national defences. The estimated cost of works and land was about £7,000,000. General accounts leave an available balance of £316,000, which will only suffice to meet payment of works under contract up to about the end of August next.

The Ranby House estate, midway between Retford and Worksop, has been purchased for Lord Lincoln, eldest son of the Duke of Newcastle, for, it is said, the sum of £55,000. The estate is well timbered, and is of great extent.

A statue to the late Joseph Sturge was unveiled on Wednesday at Birmingham, on which occasion Mr. Bright addressed those present.

Mr. Gould's tender of £545 for the erection of the new Ragged Schools at Gravesend has been accepted by the Committee.

Mr. R. Clarke's (architect, Nottingham) designs have been chosen for the square of buildings, consisting of Bank, first-class dwelling-houses, and shops, at Goole, Yorkshire. The working drawings are in progress, and will be shortly advertised for tenders for the works.

The Architectural Exhibition, 9 Conduit Street, Regent Street, and the collection of drawings and sketches of the late A. W. Pugin, will close on the 30th instant.

Mr. James Carnock, artist, who largely contributed to the establishment of the Fine Arts Academy, at Bristol, died on Friday, in his 49th year.

The oldest painter in Paris, Ingres, who is in his eighty-third year, has just finished a painting, "Christ among the Doctors of the Synagogue."

A prospectus has been issued of the Strand Hotel Company, with a capital of £100,000, in shares of £5. The site proposed is that of Lyon's Inn, comprising about half an acre.

Above £84,000 have been subscribed to a fund for building the memorial-hall in the metropolis, and erecting new chapels in the provinces, in celebration of the Bicentenary of Nonconformity. Some promoters of the movement are sanguine that even this sum will be doubled during the current year.

The new wing just added to the West of England Institution for the Deaf and Dumb was opened on Tuesday last. This wing has been built, at the cost of £1,025, by Messrs. Grant and Son, from designs by Mr. G. W. Cumming, architect.

On Thursday, June 5, the Ide National Schools were opened. The cost of the school-room and master's-house was about £750, exclusive of the site.

The Albert Memorial Committee met on Wednesday, at the Mansion House, under the presidency of the Right Hon. the Lord Mayor. The total amount received was announced to be £50,220.

On Monday last the foundation-stone was laid of the new District Church at Lendon, Widdiscombe. Mr. Rowell, of Newton Abbott, is the architect; and Mr. J. Chudleigh, of the same place, is the builder.

Captain the Hon. Windsor Clive and Mr. Botfield, the members for Ludlow, having ascertained that £500 still remained unpaid of the sum due for the late restoration of Ludlow Church, have, without solicitation, generously placed that amount at the disposal of the committee.

The Government, while declining to afford the Atlantic Telegraph Company any pecuniary assistance, have granted the use of ships for the purpose of making a more complete survey of the line between Ireland and Newfoundland. Soundings, it is stated, will be taken every mile, instead of at the wide intervals deemed sufficient when the project was originally started. Government ships will also be detailed to assist in the submersion of the cable.

The first annual meeting of the Edinburgh Coöperate Building Society was held on Tuesday last. The net profit on the Society's transactions since its commencement amounted to £112 17s. 9d., which gave a return of 13 per cent. on the paid-up capital for the year.

Sir T. G. Heskeith, Bart., M.P., has given a plot of land at Holmeswood, near Rufford, for the erection thereon of a Wesleyan chapel.

This evening Mr. Augustus Smith will call the attention of the House of Commons to the proceedings of the Westminster Improvement Commission, and ask the Chairman (Mr. Tite) what steps have been taken as to opening to view the south side of Westminster Abbey.

On Tuesday morning last the works commenced for the extension of the Government offices, and the erection of the new Foreign Office on the ground recently cleared of the houses between Downing Street and Charles Street, and St. James's Park and King Street, Westminster, and a number of workmen were engaged in laying the foundations. The demolition of her Majesty's State Paper Office, in St. James's Park, is now being proceeded with to make way for the new buildings.

Two fine colossal statues of Lord Chancellor Eldon and Lord Stowell have recently been placed in a very handsome library, erected for the purpose of receiving them, in University College, of which Society both these illustrious brothers were formerly Fellows. They are sitting figures on one pedestal, about seven feet six inches in height, executed in the finest Carrara marble.

The anniversary meeting of the Ecclesiological Society is to be held in the Lecture Theatre of the South Kensington Museum on Tuesday, July 1, and a discussion invited on the ecclesiological aspects of the International Exhibition, and of the Exhibition of Objects of Fine Art on loan in the South Kensington Museum. It is proposed that the meeting should be preceded by a visit to the latter, and by a club dinner in the refreshment department of the International Exhibition.

TENDERS.

MALTING, BEDFORD.—For the erection of a 100-gr. malting, containing a ground-floor, and three upper floors, with malt and barley chambers, and offices complete, for Bingham Newland, Esq., Bedford. Mr. John Day, architect.

Conquest (Kempston)	£2,997 8 8	Win. Smith	£2,566 0 0
Houghton	2,754 0 0	Freshwater (accepted)	2,499 0 0
Reynolds and Son	2,580 0 0	Bryant (too late)	2,495 0 0

CHICHESTER CATHEDRAL.—For the completion of the tower and spire of Chichester Cathedral.

Messrs. Beanland, Bradford, Yorkshire	£37,846 0 0	Bushby, Littlehampton	£44,890 0 0
Rudland and Thompson, Peterborough	39,661 0 0	Smith and Co., London	48,657 0 0
The lowest tender was accepted.		Fabian, Brighton	51,688 0 0

ESSEX.—For certain alterations to Warren-wood House, Woodford, Essex, for K. Mackenzie, Esq. Mr. J. H. Rowley, architect, 17 St. Helen's Place, City.

Salmon	£2,166 0 0	Bunow (accepted)	£122 5 0
Davey	142 0 0		

CHURCH RESTORATION, LINCOLN.—Tenders for restoring Washington Church, Lincoln. Mr. Goddard, architect.

Young	£650 0 0	Huddleston (accepted)	£598 0 0
Reeve	649 0 0	Smith	455 0 0
Ward	610 0 0		

CHAPEL, PENDLETON.—New chapel at Pendleton, Manchester, for the Methodist New Connection. Mr. Robert Scrivener, architect. Quantities supplied.

Neil	£2,862 0 0	Statham and Son	£2,257 0 0
Farrell	2,414 0 0	Metcalf and Waterson	2,037 0 0
Penk	2,398 0 0		

COTTAGES, POTTERIES ESTATE, PLUMSTEAD, KENT.—For building and completely finishing two semi-detached cottages, Eglington Road, "Potteries Estate," Plumstead, for Mr. Phillip Thomas. Mr. William Gosling, architect.

Lidbetter	£625 0 0	Greenwood	£610 0 0
Sonnet	615 0 0	Smith	565 0 0

HOUSES, PECKHAM.—For finishing four houses in the Montpelier Road, Peckham, for Messrs. Hart and Lovering. F. G. Widdows, architect.

Greenwood	£450 0 0	When	£347 0 0
Prott	390 0 0	Jeffer	343 0 0

VILLAS, TOLLINGTON PARK.—For erecting a pair of semi-detached villas, Tollington Park, Horney Road, for Messrs. Seales and Young. F. G. Widdows, architect.

Heath	£366 0 0	Emor	£346 0 0
Eaton and Goodwin	2490 0 0	Greenwood	2273 0 0
Flint	2420 0 0	James and Ashton	1943 0 0
Carter	2360 0 0	When	1857 0 0

NORWICH.—For erecting new parsonage house at Thorpe Hamlet. T. D. Barry, Esq., architect and city surveyor, prepared plans and supplied quantities, &c.

Brooks	£1972 18 8	Lacey	£1223 0 0
Foyson	1247 0 0	Worman	1218 0 0
Brown and Bailey	1238 0 0	Balls and Ling	1198 0 0

RECTORY HOUSE, CHALVINGTON.—For a new rectory house at Chalvington, Sussex, for the Rev. Trayton Fuller. Mr. James G. Smith, architect. Quantities supplied.

Palmer	£1,247 9 0	Constable	£1,090 0 0
Davey	1,159 0 0	H. and C. Bond	994 0 0
Donnelly	1,080 0 0	Wardle and Baker	970 0 0
Jones	1,037 0 0		

SHIP FRONT.—For putting in new shop front, and doing sundry repairs at 79 Westbourne Street, for Mr. William Fitch. Mr. Henry McCalla, architect.

London Building Company	£240 0 0	Beal and Boot	£61 0 0
Minty	196 0 0	Percy	165 0 0
Munro	173 0 0	C. and W. Fortescue	141 0 0

ROADS, TERRACES, AND SLOPES.—For laying out grounds, forming roads, terraces, and slopes, and drainage connected with the same. Erecting a porter's lodge, and laying the corridors, &c., with tile-pavement, at the Jews' Hospital, Lower Norwood, Surrey. Messrs. Tillott and Chamberlain, architects.

Mr. Willis	£1,169 0 0	Mr. Rogers	£1,111 10 0
Mr. Colson	1,134 8 0	Mr. Winn (accepted)	650 0 0

For Porter's Lodge.

Messrs. Piper and Wheeler	£377 0 0	Mr. Cannon	£325 0 0
Mr. Fish	375 0 0	Mr. Wells (accepted)	323 0 0
Messrs. Ashby and Sons	364 0 0		

For tile paving to corridors, &c.

Messrs. F. and G. Risher	£204 12 0	Messrs. Cannon (accepted)	£125 0 0
Messrs. McColla	168 15 0		

CHURCH.—For alterations to the English Presbyterian Church, Shrubland Road, Dalston. Messrs. Tillott and Chamberlain, architects.

Mr. Prince	£218 0 0	Mr. Fish	£230 0 0
Mr. Cannon	310 0 0	Mr. Wells	219 0 0

COMPETITIONS AND CONTRACTS OPEN.

DECORATION.—For the Decoration of the Exchange Hall, Stamford. Tenders to be delivered on or before Friday, the 30th of June, to Mr. Edward Browning, architect, Stamford.

ENGINE HOUSES.—For the construction of engine-houses, a boiler-house, chimney, filth-hoists, coal-sheds, dwelling-houses, wharf wall, sewers, and other works, in connection therewith, at Crossness, in the parish of Erith, Kent. Parties desiring to submit tenders may, upon payment of £21, obtain plans, sections, specifications, form of tender, and other particulars, on application to Mr. J. W. Bazalgette, Engineer of the Board, at the office, Spring Gardens, between the hours of 9 a.m. and 4 p.m., or on Saturdays between the hours of 9 a.m. and 2 p.m., until Thursday, the 3rd of July next. Half the amount will be refunded to such of the unsuccessful parties who return the drawings within one week after the day appointed for opening the tenders. The tenders are to be addressed to the Clerk of the Board, and must be delivered at his office before 4 o'clock on Thursday, the 3rd day of July next, and no tender will be received after that hour. The parties tendering must be in attendance at the Board at 12 o'clock on the day appointed for opening tenders.

CHAPEL, SCHOOLS, &c.—For the erection of a new Wesleyan Chapel, schools, &c., at Cad-oxton, near Cardiff, particulars of which may be had on application to the architects, Messrs. W. G. Habershon and Pite, 38 Bloomsbury Square, London, W.C.; Park Square, Newport, and Belvidere, Tredegarville, Cardiff.

SCHOOLS.—For the erection of school buildings, at Sutton-le-Marsh, near Alford. Plans and specifications may be seen at the house of Mr. R. Brookes, jun., Sutton, and tenders to be received on or before Saturday, the 20th of June.

PAINTING.—Tenders are required by the Burial Board of St. Mary, Newington, Surrey, for painting the whole of the iron railings of the parish churchyard, at Newington Butts. Specifications and forms of tender may be had on application to Mr. Joseph Burgess, Clerk to the Board, 1 Keene's Row, Walworth, S.

GASWORKS.—Tenders are required by the Yorktown and Blackwater Gas Company, limited, for the erection of their works, and laying about two miles of main. Plans and specifications to be seen on application to Mr. Withers, sen., Yorktown, Blackwater, Hants, or to Mr. Harris, engineer, Great Central Gas Works, Bow Common, London. Tenders, endorsed "Tenders for Gas Works," to be sent to Mr. Withers, sen., on or before the 21st of June.

GATES AND BOUNDARY WALL.—Tenders are required for back entrance gates and boundary wall, to ground in rear of the Staff College, Sandhurst, Berks. Parties desiring to tender must leave their names at the Royal Engineer Office, Sandhurst, on or before the 29th day of June, and pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded to each party as soon as prepared by the Government Surveyor.

PUBLIC HALL.—Plans, elevations, sections, specifications, and estimates are required for the erection of a public hall at Tunbridge Wells, with reading, waiting, committee, and refreshment rooms, cookery, cellarage, &c., on land with 150 ft. frontage to a public road, and 300 ft. in depth. The hall to seat 800 persons, and the cost of the whole not to exceed £26,000. £25 will be given for the set of plans, &c., adopted, provided the architect is not employed; and £5 for the next approved set. Information, and a tracing of site may be obtained of the Secretary, Mr. John Colbran, Royal Library, High Street, Tunbridge Wells, to whom plans, &c., must be sent, not later than the 20th of July next.

SCHOOL HOUSE, RESIDENCE, &c.—Designs, plans, specifications, and estimates are required for the execution of a new school-room and residence for the master, upon a piece of ground situated in Woodbridge, Suffolk, adjoining other land, the property of the Seckford Charity. A photograph view of the site, together with a plan of the ground, and printed instructions and particulars, for the guidance of competitors, will be forwarded on application to Mr. J. H. Wood, the Clerk to the Trustees, at his office, Church Street, Woodbridge, on or before the 1st day of July next. £20 will be given for the best design, £10 for the second best; such designs to become the property of the Trustees. The sum to be expended is not to exceed £2,500.

COAST-GUARD STATION.—For the erection of a coast-guard station at Felpham, near Bognor, Sussex. Drawings and specifications may be seen at the coast-guard watch-room, Bognor, or at the Admiralty Coast-guard office, 12 Spring Gardens, London, S.W., where tenders are to be sent directed to the Commandore General of Coast-guard, and endorsed "Tender for Felpham station," not later than noon of the 23rd inst.

SEWERS.—For constructing four sewers. Plans, sections, and specifications may be seen, and printed forms of tender and further information obtained by applying to Mr. R. E. Rowe, Town Surveyor's Office, 10 Emmanuel Street, Cambridge. Tenders to be delivered by Monday, June 16.

SEWERS.—Tenders are required by the Board of Works for the Fulham district, in the County of Middlesex, for the laying down, constructing, and completely finishing a brick sewer, of about 1.1 ft. in length, and other works connected therewith, in the New Road, Hammersmith. Plans, specification, and detail drawings of the works, together with the form of tender, may, with other particulars, be obtained at Broadway House, Hammersmith, between the hours of 10 a.m. and 4 p.m., on any day previous to June 18. Sealed tenders are to be delivered on or before that date, addressed to the Chairman of the Board, at their office, Broadway House.

BARRACKS.—For the erection of west wing of soldiers' barracks, and soldiers' quarters, Fleetwood. Parties desiring to tender for the erection of these works must leave their names at the Royal Engineer Office, 225 Stretford Road, Manchester, on or before the 16th inst., and pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded to each party as soon as prepared by the Government Surveyor.

CHURCH IMPROVEMENTS.—The execution of improvements on the Free Church, Virginhall, N.B. wanted from joiners, painters, and plasterers. Specifications are in the hands of the subscriber, who will give all necessary information, and receive offers up to Wednesday the 18th current.

ROADS.—For maintaining and keeping in repair, during the term of four years, commencing from the 15th May last, the roadways of the following County bridges, viz.:—Stone Bridge, Langley Bridge, Brancepeth Bridge, Crook Bridge, Eel's Beck Bridge, Bradley Bridge, Nicky Nack Bridge, Gibbon's Bridge, and Spennymoor Bridge. Further information may be had on application to W. Crozier, Esq., C.E., Bridge Surveyor, at his office in the County Courts, Durham, to whom tenders sealed and endorsed "Bridge Tender," are requested to be sent, or delivered, on or before Friday June 20.

ROADS.—For making, widening, and repairing the line of road from Bannan to New-Galloway, in the parish of Kells, viz.:—1. For making about 100 rods of new road. 2. For widening and repairing about 100 rods of the present road, and 3. For widening and repairing from 500 to 300 rods of the present road towards the south end of Loch Ken. All conform to plan and specifications, to be seen in the hands of Thomas Blackley, Road Surveyor in Castle-Douglas, up to Monday, the 23rd inst., at noon, with whom, before which date, tenders must be lodged.

ABRIDGED SPECIFICATIONS OF PATENTS FOR INVENTIONS.

From the "MECHANICS" MAGAZINE, June 6.

2843. J. H. JOHNSON. Improvements in the construction of steam or other vapour and water or other liquid tight joint. (A communication.) Dated Nov. 12, 1861. The liquid tight joint is produced by the combination of an open or split packing ring of copper, or other suitable metal, with a V or angular circular groove formed on one or both junction surfaces, or with angular or bevelled surfaces, on one or both faces of the joint, in such manner that the ring, which is open or in a slightly expanded state, when placed in or upon one of the angular surfaces or grooves, shall be closed, and forced into its proper place by the act of compressing the two parts of the joints together. *Patent completed.*

2851. E. C. KEMP. Improvements in gas-lamps, glasses, and other fittings. Dated Nov. 13, 1861. This relates to gas lamps, their glasses and tops, and consists, 1, in constructing the framework, or parts that retain the glass, of a hall lamp so that a single nut and screw at the top of each pillar or upright bar thereof serves to unite the upper frame, and the radial arms by which the lamp is supported and suspended from the centre; also in supporting them by a hook and eye from the gas-pipe in such way that the lamp can be unhooked at pleasure without interfering with the gas-duct. The invention also relates to gas and other lamps and their glasses and shades, and to the method of applying them to the fittings. These glasses or shades are generally supported by a triangular piece from the bottom, which throws a disagreeable shadow downwards. According to this invention the patentee supports them from the upper part, and for this purpose he makes the glass somewhat in the form of an inverted parabola or bell shape, with the large end uppermost; this is formed with a lip, which is inserted within a ring fixed horizontally at the termination, and on a level with the gas-arm of the lamp, or chandelier, or other fitting. The glass rests on two lugs within the ring, and is inserted from below, and fixed by a screw opposed to the two lugs. The gas is conducted by a small pipe from the arm, and descends within the parabolic shade to a suitable point; an opening is made in the bottom of the shade for the admission of air. He further applies a top or cover which harmonises with the contour, and completes the above form and arrangement of the shade. *Patent completed.*

2853. L. ROLLAND. An improved spring-door shutter, with a movable lever. Dated Nov. 13, 1861. This invention consists in setting a stiff metallic wire along the frame of doors, a little behind and parallel to the line of hinges, and extending about the whole height of the said doors; the upper end of the wire is punched in a little socket fixed to the frame, while the lower end, running freely in another guiding socket, is pinched below by a small cap carrying a hinged lever, which lever can be brought at pleasure in a horizontal or vertical position, in the first case, bearing against the door, it shuts by the spring action of the wire; in the second case, standing up against the frame, it has no action on the door, which can remain open or shut by hand. *Patent abandoned.*

2859. F. CONEY. An improved stock for brooms. Dated Nov. 13, 1861. The object of this invention is to obtain the equivalent of two separate brooms upon one stick or handle, and the invention consists in forming the stock with a head and two sides as hereafter explained. A hole is made in the stock for the reception of the stick or handle; the two sides are continued down at angles, approach or meet at the bottom of the broom, and carry bass, hair, or other fibre; one side may be filled with bass, and the other with hair, or they may both be filled with similar or different materials suitable for brooms. *Patent completed.*

2864. J. LESLIE. Improvements in the manufacture of gas. Dated Nov. 13, 1861. Here, in order to manufacture gas more advantageously from hydro-carbon fluids, the hydro-carbon fluid is caused to flow or drop down a tube or series of tubes, by preference in an upright position, within an outer vessel or retort, which is heated externally. *Patent abandoned.*

2865. H. R. FAICKER and J. MANLEY. Improvements in apparatus for facilitating the cleansing of sewers and other water-courses or ways. Dated Nov. 13, 1861. This consists of a bar or axis of wood or iron, having thereon numerous tines, or blades, or stivers, which are fixed round the circumference of the bar or axis in such a position as to stand in the place of the thread of a screw, the bar forming the centre or shaft of such screw; thus placed, tines, or blades, or stivers are actually detached portions of the thread of the screw. The two ends of the shaft or axis are furnished with swivels, and by the act of drawing or moving the shaft or axis longitudinally through water or mud, such shaft or axis will revolve or rotate together with the tines, or blades, or stivers thereon, so as to agitate the mud and matters which are below the water, and beat up and internally mix such mud and matters as are in the sewers, rivers, &c. *Patent completed.*

2866. A. C. LIPSETT. Improvements in apparatus for heating or boiling fluids for domestic or other purposes. Dated Nov. 14, 1861. Here the inventor uses a vessel of any desired dimensions, and formed of a conical shape, tapering smaller towards the bottom, at which part it is provided with a watertight aperture employed for fitting the vessel upon a tube fixed to a circular concave saucer or plate, so that the bottom of the vessel does not touch the saucer, but allows it, as well as the conical surface of the vessel, to be exposed to the flame arising from the ignition of methylated spirits of wine, or other suitable spirit placed in the saucer. *Patent abandoned.*

2869. M. WIGZELL. Improvements in machinery or apparatus to be used in moulding and casting twisted nails, bolts, and screws, for sheathing vessels, shipbuilding, and other purposes. Dated Nov. 14, 1861. This consists of a plate or plates fitted with any number of nuts, through which screws of the required pitch work; on the ends of the said screws are attached the screws or twisted form of nails forming the patterns of the articles to be made, which patterns, by being made to descend, screw themselves into the sand or other material used instead of sand, and produce the required form or mould. The plate or frame containing the screws is made to rise or fall by a screw or lever, by hand or any known motive power; and this plate or frame, when raised, carries with it the screws and patterns of the nails or other articles to be made, and causes them to twist or unscrew themselves out of the mould, the nuts through which the screws work being fixed and arranged on a suitable framework or stand. *Patent completed.*

2872. G. HAWKLEY. Improvements in apparatus for sounding alarms and actuating ventilators. Dated Nov. 14, 1861. This consists in means for sounding alarms and actuating ventilators when the temperature of an apartment is increased beyond that at which the apparatus is set to go. This object is effected by means of strips of metal (by preference zinc) which will expand freely by heat, in combination with certain levers. *Patent abandoned.*

2874. C. H. MUEHLEN. Improvements in ventilators for railway and other carriages and for other similar purposes. Dated Nov. 16, 1861. This invention is carried as follows:—At the top of the aperture, for the window sash, and behind the grooves in which the sash slides, the inventor places one or more strips of wire or silk gauze, joined together, so that they can be folded or opened out, the top strip being held by pivots working in bearings fixed to the frame. The bottom strip of gauze is mounted with a bevelled strip of wood or other material, to which the top of the sash is made to correspond, and the strips are made to unfold or expand by weights on pulleys. There are details, which we cannot here give space to. *Patent abandoned.*

2877. E. LOMES. Improved machinery for moulding bricks, tiles, and other like articles. Dated Nov. 15, 1861. This consists in adapting to the lower end of the pugmill shaft, one, two, or more eccentrics, cams, wipers, &c., in combination with moveable stops, against which the clay or substance to be moulded is pressed by the cams or wipers as they move round. By that means the clay is squeezed between the curved surfaces of the wipers and the stops, and will thereby be forced out of the mill through the apertures provided for the purpose, and will be pressed into or through moulds or dies. *Patent completed.*

2888. J. ELSE and T. GONFREY. An improved washing apparatus. Dated Nov. 16, 1861. This consists of an oblong frame of wood, or other suitable material, the bottom whereof is open, and the lower ends of the sides of the frame are either straight, or are inclined inwards, the inclination being such that the frame will be firmly on the bottom and sides of a puncheon, or washing-tub, or vessel. On the sides of the frame, inside thereof, are two grooves which receive the edge of a sheet of zinc, or other suitable metal, which is corrugated in the direction of its width, having corrugations either of a uniform character or varying in their width or depth. The corrugated sheet is somewhat raised in the centre, and lies on a strip of wood or other material which is placed centrally between the sides of the frame, and stands a little higher than the slots in the sides of the frame; the ends of the strip rest upon the pieces of wood or other material stretching from side to side of the frame. From a little below the top piece, and at a short distance from the back thereof, is a piece of wood or other material which extends to the top of the frame, and connects the top end and sides together, and also forms a surface for the water to run down when the apparatus is in use. *Patent completed.*

PROVISIONAL PROTECTIONS.

1001. H. A. Holden, Birmingham, merchant, and C. Weekes, Carmarthen, C.E. Improvements in apparatus used in drawing water or other fluids from cisterns, tanks, or other vessels. Dated April 8, 1862.

1110. J. H. Johnson, 47 Liocola's-inn-fields, gentleman. Improvements in machinery or apparatus for cutting the teeth of wheels, racks, or segments. (A communication.) Dated April 16, 1862.

1142. W. Muna, Borrowstounness, Linlithgow, N.B., engineer, and D. Ballantine, jun., ironfounder. Improvements in mills for grinding. Dated April 19, 1862.

1163. A. Dixon, Birmingham, engineer. Improvements in knife and fork cleaning machines. Dated April 21, 1862.

1187. A. V. Newton, 66 Chancery Lane, mechanical draftsman. Improvements in looms for manufacturing tufted pile fabrics, and in the mode of operating such looms. (A communication.) Dated April 23, 1862.

1211. P. R. Drummond, Perth. A revolving rake for lifting objects from the ground. Dated April 25, 1862.

1261. E. Moore, Tewkesbury. Improvements in the manufacture of dress skirts and dresses. Dated April 30, 1862.

PARTNERSHIPS DISSOLVED.

James Smyth Benet and Arthur Newson, Norwich, architects.

Jacob Marvel Robertshaw, and George Lax, Leeds, builders.

William Whitehorn, and Reuben Cook, brickmakers.

William Flanagan, Owen Morgan, and James Brown, Liverpool, joiners.

BANKRUPTS.

Joseph Johnson, Flora Villas, Albion Gardens, Hammersmith, plumber, June 24, at 12.

John Child, Weymouth Terrace, Hackney Road, builder, June 24, at 1.

William Shepherd, Berry Edge, Durham, joiner, June 30, at 12, Bankrupts' Court, Newcastle-upon-Tyne.

Thomas James, Sheen, Buckinghamshire, timber merchant, June 23, at 12, County Court, High Wycombe.

Henry Wick Clarke, Providence Row, Old Ford Road, Bow, carpenter, June 18, at 11½.

Joseph Julien Kadowski, Buckingham Place, Fitzroy Square, designer, June 17, at 3.

William Holmes Wakelin, Ealing, builder, June 17, at 3.

William Cook Bramwell, Blackburn, Lancashire, builder, June 20, at 12, Bankrupts' Court, Manchester.

Thomas Dovener, Burnley, Lancashire, stonemason, June 23, at 3, County Court, Burnley.

George John Merritt, Landport, Hants, stonemason, June 24, at 11, County Court, Portsmouth.

William Hyde, Weston-super-Mare, Somersetshire, carpenter, June 21, at 10, County Court, Bathbury.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

Received.—C. and L. (too late), R. C., T. T., Chalk Lane, W. H. T., B. & C., Juvenile Architect, J. M. H., G. J. P., J. G. B., J. T., J. W., J. B., J. J. B., T. W. G., W. F., Quandom, P. G., W. H. R., T. R. S., M. O. T., R. S., B. W., H. L. J., J. H. B., J. C. (too late), W. H. D. (next week), J. P., J. W.
J. M. Hay.—The table of fees adopted by the Glasgow architects, is to be found in the BUILDING NEWS for March 8, 1861, p. 214, appended to a letter which bears the heading "Architects' Charges."

* * NOTICE.—The BUILDING NEWS is now published at 166 Fleet Street, where all Communications and Advertisements should be addressed.

THE REGULATION OF ARCHITECTURAL COMPETITIONS.

A PAMPHLET in the form of a letter, on the above subject, has reached us—printed for private circulation by Mr. John Honeyman, Junr., a member of the Glasgow Architectural Society. It seems that the subject of the regulation of architectural competitions has come before the members of that Society, and that they have determined to try a scheme similar to the one attempted by the Architectural Association a good many years ago—namely, the establishment of a code of regulations, by which competitions are to be governed in such a way as to secure fairness to all parties.

The very serious nature and extent of the evils attendant upon the present mode of conducting architectural competitions, have been too frequently acknowledged to admit of a moment's doubt. It is quite certain that to all engaged in them, to employers quite as much as to architects, any effectual plan for checking those evils would be of the greatest advantage, and there can be little doubt that improvement must and will come, so great is the desire felt for it among the members of the profession.

It will be necessary, before competitions can be established upon a basis at once satisfactory and permanent, to restrain competitors from certain questionable proceedings, at present frequently taken, and also to restrain those who invite architects to compete, from occasioning certain irregularities and omissions, which are equally frequent. All the schemes hitherto brought forward have been based upon this necessity; they have consisted of regulations, some intended to be binding on competitors, and others on those who invite competition; but they have overlooked the all-important question, "What power is competent to exercise the restraining influence admitted to be essential?"

It is the misfortune of almost all proposals hitherto made, to labour under the same difficulty as the celebrated scheme of the mice who proposed to "bell the cat;" the remedy would indeed be effectual, but no one is able to apply it.

As regards employers, it is quite clear that neither architects nor anyone else can, by any regulations, prevent public bodies or others from putting just what advertisements they please into the public papers, and offering what premiums they please, under whatever conditions they think proper.

This has been so obvious that the reformers of competitions have almost always admitted its truth; they have, however, concluded justly enough, that could they get the whole architectural profession to agree never to compete except upon certain terms, they should reduce the public to the necessity of accepting those terms as often as they thought it necessary to invite plans from competing architects.

To obtain the unanimous consent of so large, so scattered, and so irregularly constituted a body of men as the members of the architectural profession, to any set of rules, will be found far more difficult than has been supposed, and probably there is not a single point among those which will be uniformly admitted to stand in need of remedy, which all would propose to rectify in the same way.

Men also feel, that although they would gladly conform to any just regulations, to which all the members of the profession subscribe, they will not bind themselves to a code, however reasonable, to which only a few, or even to which only a majority of architects have given in their adhesion; for the effect of this would be, to shut themselves out from advantageous competitions, and to leave the way to success all the more open to less scrupulous rivals.

The particular scheme advocated in Mr. Honeyman's pamphlet is open to the same objection which lies against other proposals to establish a code of regulations, to a greater degree perhaps than they; and it seems not unlikely that, if accepted, its operation would be less satisfactory than that of other schemes. The idea is, that architects are to enter into an agreement, that so often as they compete for architectural work they will conduct their competition in a certain way; and further, that any competitor who has entered into this bond, and is found to have gained a competition in any other way, is to forfeit a considerable sum of money.

There is less likelihood of this proposition being generally agreed to than almost any other which has yet been brought forward; there is, further, the certainty that if it were established, while it might to a certain extent operate as a check, there would result from it litigation, heart-burning, and dissension to no common degree; and lastly, we cannot help feeling, that such a regulation generally agreed to would seem very much to stigmatise the architectural profession in the eyes of its own members and of the public.

We believe that all these methods, which partake of the nature of compulsion, will and must fail, and that the real remedy lies in the moral influence which the growth of a high tone of professional feeling and unanimity among architects will exercise, and in the use of such moral means as will make no pretension to compulsion, and will consequently not provoke resistance or distrust.

United action, and the sort of *esprit de corps* which will prevent a man's doing for his own benefit that which will damage the profession to which he belongs, is not a thing to spring up all at once, and the great stride which the architectural profession has made in a few years may well be supposed to have introduced elements which time and care will be required to consolidate. The process is going on, however, and we doubt not that the day is approaching when the general feeling of the body of architects will far more effectually hold back men of weak principles from disreputable modes of gaining practice, than any code of laws which can possibly be framed.

The Northern Architectural Association has set an example, in the direction of attempting to guide public bodies, which deserves consideration. Its members have agreed upon certain conditions, which they can recommend to committees and others as those which they conceive likely to ensure a fair competition; and whenever a competition is announced, the Secretary of the Association forwards a copy of this list of conditions to the conductors of it. In some cases they have been adopted; and we believe that were other architectural bodies to pursue a course thus moderate and dignified, they would be more likely to effect their object than by advocating or attempting to enforce more forcible measures. Many, we believe most, committees and public bodies, are sincerely desirous to do right; and when they sanction a job, do so because one or two of the most clever and least principled of their number have succeeded in carrying matters their own way; and a document of the nature of suggestions, coming from a source of undoubtedly good standing, and on the face of it fair and business-like, would be likely to command assent, and to be adopted without difficulty in many cases. At any rate, the proper way to go to work is to establish and exercise a moral influence; and we fear that the suggestion of the pamphlet before us, however well meant, has more of material than moral force in its nature.

ART AND MANUFACTURE.

WHEN any object of use or luxury is frequently demanded, the making of it begins to assume that regular and systematic form which we call manufacture. Articles that are seldom wanted, or which have some peculiarity of their own, are usually said to be made, while those which, like soldiers' uniforms, are made in large numbers, and of certain specified sizes, are said to be manufactured.

This broad distinction between making and manufacturing is one that we do well to bear in mind, because the application of art to handicraft is governed by two essentially different principles, according as the work to be done is or is not a piece of manufacture. In the one case the handicraftsman must be an artist, in the other it is the maker of the original pattern, and not the actual handicraftsman, in whom the feeling and skill of an artist are required. Let us, for instance, compare ornaments in wrought and cast iron. The workman engaged upon a piece of ornamental wrought iron work may or may not have originated the entire design. He may or may not work from a sketch, a drawing, a model, or even a completed piece of iron work. In any case, however, the character of the completed work depends not a little upon his artistic feeling and skill. If he have an original in the same metal before him, the degree in which he will catch its spirit and reproduce it depends entirely upon his skill and cunning.

With cast iron, however, the workman has a very subordinate part to play. A pattern is put into his hands, and all he does, or can do, is to take a very accurate impress of that pattern in sand, and then to pour molten metal very steadily into the mould. The pattern that came into his hands is the circumstance which influences the character of the ornament produced, and so long as he can mould neatly and pour steadily, any number of castings may be produced, each like the other and quite independent of the workman's possessing or wanting artistic sense and taste.

That the difference here pointed out obtains, between all articles manufactured in quantities, and all those made singly, will probably be admitted without hesitation. We admire the art of the carver when we examine a cornice carved in stone or wood; but when we admire an enriched plaster cornice, though we may praise the workmanship of the plasterer, we admire the *art* of the original modeller. The painter gives the impress of art to a picture, of which he with his own hand lays the colours on to the canvas; but in an engraving we owe the beauty and value of the work, not to the printer who spreads the ink on the plate and passes it through the press, but to the engraver, whose cunning cut into the plate those original lines.

Just as there is higher art in painting than in engraving, in sculpture than in plaster casts, in beaten work than in metal-work; so there always will and must be the highest excellence in those productions in which the same mind which originates guides the hand that executes. Though this be true, there is an absolute necessity for the adoption of the principle of manufacture in meeting the wants of a populous and civilised country. Hence it comes to pass, that in

executing works, even of an ornamental nature, we are obliged to be content with only seldom employing artistic handiwork, and to resort to rapid methods of manufacture.

This necessity being admitted, it remains that, while we should jealously guard against the infringements which manufacture is likely to make upon the legitimate domains of art, we should at the same time exert ourselves strenuously to ensure the assistance of the best art available for forming the patterns and originals of all manufactured goods. We have been of late sincerely desirous to extend the application of art manufactures, and have succeeded wonderfully well; we have also done a great deal within the last few years to improve the taste and skill of the designers of all sorts of ornamental articles and objects. It is, however, to be feared that we are by no means equally on our guard against the danger of allowing manufacture to usurp the place of handicraft, in even the highest departments of art; and it is principally with a desire to draw attention to this danger that the subject is now considered.

The ordinary architecture of the day (and architecture is generally the truest exponent of the state of popular taste) is one admitting of as wearisome a repetition of the same pattern time after time, as any which can occur in the manufacture of wall-papers, or table-cloths, nor is the state of Paris in this respect much better than that of English cities. In short, a vast majority of our buildings may be compared to the Latin and Greek verse produced by the hundred lines at public schools, constructed upon a definite form, supplied with metaphors, similes, and epithets, from a supply carefully classified and alphabetically arranged in the "Gradus ad Parnassum."

The very fact that symmetrical repetition of equal and similar features, is one of the main sources of effect in all the classical styles, and that the classical styles or corruptions of them have been, since the Reformation, the only ones generally popular in this country, has induced a strong inclination to promote the endless repetition of those small details where carving or other handiwork might have been happily introduced, to stamp an individual character upon a whole building, or portion of a building; and it is indeed fortunate that the Gothic revival has at last come, and drawn attention to the value of the opposite principle, that of endless variety and individual character, both in features and in buildings.

While good Gothic work will always command and require the labours of original artistic workmen, in many branches, we cannot but see that the manufacturer has been called in, not only to aid the architect by the production of simple, and necessarily manufactured articles, such as tiles, window quarries, or crests, but even to supplant the art-workman in portions of the building, which can ill afford to lose the characteristic touch which the individual workman alone can give.

There is nothing so truly living and artistic about a building, as the carving on its nooks and corners, its angles, pinnacles, and bosses; yet we have carving-works, where the work is performed wholesale by machinery, and if we do not also carve stone by a similar process, it arises more from the intractability of the material than from an indisposition to subject it to the steam-engine and the drill. But metal work illustrates, far more than any other work, the danger of allowing the wholesale manufacturer to invade the domains of the artist. Nothing affords finer scope for the display of original design, and of good artistic feeling in the workman, than the ornamental hinge fronts on the face of a Gothic door, and the beaten finials which mark the highest points of the roofs, or crown the summits of spirelets, dormers, or other small features: yet how seldom is the hand of an artist—an original worker—discernible in these features, particularly in the hinges! We get the pattern-book of one of the manufacturers of such articles, and having satisfied ourselves about the price, the discount, the extra charge for carriage and packing-cases, and the length of credit given, we order a pair of hinges, No. 25, or No. 50; and a ring, No. 12, and latch No. 2, just as if an ornamental feature on the level of the eye, and exhibited with every advantage of contrast, of colour, as well as proximity, were not as worthy of the best design and original handiwork as the bosses that stop the label which shelters the doorway, or the tender garland of spring flowers which twines and curls in the deep hollow running round it not twelve inches away!

It is of course true that, but for the artistic and inexpensive way in which such articles are now manufactured, they would be omitted altogether from very many economical buildings to which they form an agreeable ornament, at an almost nominal expense; but this is no excuse for adopting cast hinges and cast-iron finials in places where the funds exist for original work. Where the character of the work rises to that of pure art, the importance of avoiding manufactured ornaments, and replacing them with wrought ones, is very great.

Such a work as the Hereford screen at the International Exhibition, purely ornamental in intention, rich in design, lavish in decoration, and especially beautiful from the variety of its colouring, presents, in its smallest parts, an amount of repetition which would not have

occurred in a mediæval work of the same value. True, the middle age workmen would have wrought upon it for more years than the "Skidmore Art Manufactures Company" have done months; but it is thus only that a great piece of purely ornamental work ought to be produced, and thus alone that it can be rendered instinct with life and beauty, to the tip of every tendril and the heart of every feature and leaf, and thus alone that it can thoroughly merit the place of a work of the highest art.

We have chosen this illustration, because this repetition of minor features in a work of confessedly very high merit, coupled with the ominous title assumed by the well-known makers of the screen, and with the still more ominous praise showered upon those makers for the speed with which the work was done, argues unfavourably for the course in which we are going; and will even compare unfavourably with the best examples of renaissance work, where the temptation to abandon all attempts at individuality of workmanship is far stronger than it can possibly be in any work of Gothic character.

One thing must not be altogether passed over, and that is the possibility of adding nobility to almost any article of artistic manufacture by employing design in the use of it. For this purpose the articles themselves usually require to be simple, or they will not lend themselves well to the duty required of them; employed by an artist, the most simple coloured tiles, arranged in a good pattern, will surpass in merit the most elaborate manufactured pavement; the plainest glass quarries, well used, will outshine the most brilliant embossed window; and the simplest geometrical mosaic will give more real pleasure, and show more true art, than the most elaborate piece of machine carving untouched by the chisel of the workman.

For these purposes art-manufactures are good, but as a substitute for real original art they are bad; and plentiful, cheap, and specious as they are, it will require all our watchfulness, especially in this age of haste and inattention, to prevent their being adopted for uses which they cannot properly subserve, and exalted to positions which ought either to be occupied by something better, or honestly left vacant.

THE TRUTHFUL IN ART.

ON the 3rd of this month, Mr. Robert W. Edis read a paper before the Architectural Association, on "The Truthful in Art." This paper may be considered a fair sample of many others read before our architectural societies. It is a model of the forcible feeble style. Its writer appears to be lost in a fog, which is only occasionally lit up by scintillations of sunlight. Mr. Edis must certainly be the victim of some melancholy longing, which no language can express, and which no reality can satisfy. He, evidently, can only see as through a glass darkly. Everything wears to his eye a shadowy indistinctness. He sees in every direction men as trees walking. Where an ordinary person would behold a church tower, Mr. Edis would see pictured before him a kind of pillar, half fire and half cloud, which recedes into the dim distance when approached by mortal feet. He appears to be overwhelmed with the vast power of his own imagination. He takes the greatest possible liberty with nature and the English language. He tosses about phrases in fantastic confusion. He piles up a pyramid of epithets, and complacently examines it as a glorious work of art. He comes before the world as a preacher who does not understand his text. As a proof that we in no way misrepresent him, we will take as a sample a sentence or two from the introductory portion of his paper referred to. "To know," says Mr. Edis, "a truth well, we must fight it out; to gain that knowledge we must diligently strive to act up to those better principles and nobler thoughts which lie in the hearts of most men, and which, until the heavy cloak of indifference and carelessness in the first place, and falsehood and hypocrisy in the end, would ever appear openly, as the glorious sunlight of the heart words that lie within, guiding away right through the night of our own perversity and obdurate nature, which so long has obscured the truthfulness in us. Truth, then, is the great veil of Nature which God has spread over eternity; so Art lifts the veil which conceals the glory which once was, and shows forth all the beauty therein, bringing out all that is latent in fabric and jewels, stone, marble, and all else that is, and Truth combined with Art, must tend to lift man from the mere material and sensual in art, to the ethereal and highest nobility. And it should be our earnest purpose to strive to use well and properly that which learning and science has placed within our grasp; there must be throughout our striving an undercurrent of conscientiousness and truthful endeavour, a something which casts out all shame, all hypocrisy, and leads us to look at our noble art, not in the light only of making money, but as something to teach to future generations some little good, to write down in the pages of the present as we best can, and with the best of our ability, some few lines of the great art-poem, that has been ebbing and flowing from good to bad in past generations, and must still ebb and flow till all becomes as the

baseless fabric of a vision. Truth is a great virtue, in all art as in all else," &c.

If Mr. Edis or anyone else can see any rhyme or reason in this passage, he must possess more intelligence than falls to the ordinary race of mortals. The first sentence consists of a string of words put together with no definite meaning or purpose. We have vainly endeavoured to get at the idea with which the writer must have supposed he was inspired when he constructed the sentence. We are told something about "the better principles and nobler thoughts of the heart;" and something about "the heavy cloak of indifference and carelessness in the first place, and falsehood and hypocrisy in the end;" and of "the long night of our own perversity and obdurate nature," which have obscured the truthfulness in us. But what do all these fine words mean? Mr. Edis leads us into the dark and leaves us there. Would it not be better to have fewer splendid phrases and simpler ideas? When the author assumes the functions of the interpreter of Truth, he does not shine more conspicuously. He says, "Truth is the great veil of Nature," but we do not see why it should be so, any more than that Nature should be the veil of Truth. Then we are told that God has spread this great veil of truth over all eternity. A moment before it was the obduracy of our nature which obscured the truthfulness within us; now it is truth obscuring all eternity. Why truth can or should obscure all eternity we are not told. Having boldly advanced into the very *sanctum sanctorum* of the universe, Mr. Edis becomes more courageous, and proclaims the mission of Art. "Art," he says, "lifts the veil which conceals the glory that once was." According to this teaching, truth is a veil, and glory no longer exists, as it "once was," but this glory that "once was," still possesses "beauty." We should have thought that truth, instead of being a veil, was veiled by ignorance and prejudice, and that Art assisted to lift the veil so that men may see the beauty of truth.

Not satisfied with giving one memorable revelation in a sentence, Mr. Edis, without stopping to take breath, rushes on to inform us that Art, which lifts the veil of truth spread over all eternity, also brings out all that is latent in fabrics, jewels, stone, marble, and all that is concealed in eternity. Now, with our less imaginative minds, we should have thought that jewels, fabrics, stone, and marble had not been eternally concealed, and that they did not want Art to lift the veil of truth from all eternity to make them manifest. We should have thought that Art did something to produce jewels and fabrics. But what jewels and fabrics, stones and marbles, have to do with truth, nature, and eternity, Mr. Edis does not condescend to inform us. In the next branch of the sentence we are told that "Truth combined with Art must tend to lift," not a veil, but man. Truth at one moment was a thing to be lifted, the next moment it was an agent lifting man. After many long and laboured phrases, in which "the material," "the sensual," "the ethereal," "the highest nobility," "art," "science," "striving," "under current of conscientiousness," "truthful endeavour," "sham," and "hypocrisy," are huddled together in unutterable confusion, the writer indulges in another flight of imagination, and tells us "to write down in the pages of the present as we best may, and with the best of our ability, some few lines of the great art-poem that has been ebbing and flowing, from good to bad, through past generations," &c. First, Art is a poem towards which all are invited to contribute a few lines, as "they best may, and to the best of their ability;" then this poem, by a sudden transformation, is converted into an ebbing and flowing sea, which is not made to wash the shores of time, but to ebb through past generations. From the past, our imagination, in the twinkling of an eye, is transported to the future, when Art, Truth, veils, Nature, eternity, shams, hypocrisy, science, learning, the sensual, the ethereal, and "all becomes as the baseless fabric of a vision." The next sentence opens with another astonishing revelation. Truth, which was a veil over-spreading eternity, becomes, by a sudden movement of the enchanter's wand, "a great virtue in art." We might go on to show the other lofty flights of imagination which the writer has endeavoured to scale. But we will neither waste our own space, nor trespass on the patience of the reader by so doing. Mr. Edis reminds us of a little girl we once knew, whose mother was a French lady and whose father was a German. The little girl knew a little of French, a little of German, and a little of English, and sometimes when wishing to make herself understood, she would utter a sentence of mongrel English, French, and German, which nobody understood. The little girl, however, had a definite idea of her own, but clothed it in confused words. But Mr. Edis's ideas appear to be as foggy as his language is chaotic. Instead of studying the rules of Lindley Murray, Mr. Edis must have been sitting at the feet of Lord Dundreary. That noble gentleman never utters two consecutive sentences coherently. He is no sooner in the middle of a sentence than he loses his way, and like Mr. Edis, soon manages to get into confusion worse confounded. There is a difference, however, between Lord Dundreary and Mr. Edis. Though the one does not attempt to instruct his hearers, he

manages to amuse them, while the other neither interests nor amuses. When Mr. Edis gets into the depths of his subject, he flings about denunciatory epithets in the most unsparing manner. He speaks as if he were the only living high priest of Art. He pours contempt on the last five centuries of artistic effort. We have been told on high authority that "fools rush in where angels fear to tread," and we have living example before us. Mr. Edis comes before the public as a teacher of art architecture, without having studied the simplest rules of composition. He reads a paper which violates all the requirements of grammar. There is contradiction, confusion, and chaos in almost every sentence he utters. His paper is a shapeless mass of unintelligibility. And yet he comes before society as a denouncer of honoured names, as a deliverer from corruption and thralldom, and as the herald of a revolution in architecture. Before he undertook so important a mission, the very least thing he could have done was to have treated the English language with a little more respect. Before he undertook to take the beam from the eye of the public, he should have endeavoured to remove the mote from his own eye. We are now inclined to say, "Physician, heal thyself." Mr. Edis, and other aspiring teachers of architecture, should bear in mind that the art of composition deserves some consideration. The written language of a people is of as much importance as the architecture of a people. The teachers of the "Truthful in Art," should study with something like ordinary care the art of speaking and writing correctly and coherently, or we shall witness other examples of the blind leading the blind. We do not remember an instance of a man attacking so violently the customs of society as Mr. Edis has done in the paper we are now considering. Everything about him is denounced as sham, paste, plaster, hypocrisy, lying, and imposture. So slashing a critic and so fierce a declaimer should have come into court with cleaner hands. He must polish his periods and point his style if he is effectually to do the work he has undertaken. At all events, being so severe a critic himself, he cannot object to be severely criticised in return.

Literature.

THE MAUSOLEUM AT HALICARNASSUS RESTORED.*

IN the introduction to this admirable work, Mr. Fergusson very justly claims for the renovated Mausoleum of Halicarnassus the attention of all who take an interest in ancient, or who are engaged in the study or practice of modern architecture. All we actually knew of it till recently, was that the ancients were inclined to regard it as the very best specimen of architectural art which they possessed. Not only did they rank it as among the seven wonders of the world, but assigned to it that preeminence for the intrinsic beauty of its design, and the mode in which it was ornamented. Perhaps, before proceeding to speak of the volume in a critical sense, it may be well to enter into a brief account of the manner in which reliable materials have been gained for its production, and to render proper tribute to those who collected them. In 1846, Lord Stratford de Redcliffe obtained from the Porte a firman for the removal of certain bassi-relievi, which had been built into the walls of the castle of Budrum, the ancient Halicarnassus. These arrived in England in due course, and were at once admitted to be fragments of the sculpture of the mausoleum, as it had been previously assumed that they were. But their beauty only served further to increase the regret that all traces of the building to which they belonged should have been, as it thus appeared, for ever lost.

While things were in this unsatisfactory position, it was stated that Mr. Charles Newton, formerly an officer of the British Museum, and then Vice-Consul at Mytilene, had not only discovered the true site of the mausoleum on a spot previously indicated by Professor Donaldson, but had also found considerable remains of the long-lost building. Public attention, says Mr. Fergusson, was still further attracted to the subject, when it was presently announced that the British Government had fitted out an expedition to continue the explorations of Mr. Newton at Budrum and its vicinity. Everything seemed to shadow forth a most brilliant success, and from the high character which Mr. Newton bore as a Greek scholar, and a thoroughly educated archaeologist, all the Hellenist public rejoiced that an expedition fitted out on so liberal a scale, and for so desirable an object, had fallen into, what they believed to be, so competent hands. The first published results, continues Mr. Fergusson, were not encouraging. They took the form of papers presented to Parliament, and these were published as a Blue Book in 1858. A

* The Mausoleum at Halicarnassus Restored in Conformity with the recently discovered Remains. By James Fergusson, Fellow of the Royal Institute of British Architects, Author of the "Handbook of Architecture," &c. &c. London: John Murray, Albemarle Street, 1862.

second series of papers appeared in a similar manner in 1859. Diagrams illustrated the papers, and these are taken exception to by the author of the volume under notice. Finally, the labours of the expedition resolved themselves into the shape of a folio volume of plates, accompanied by a volume of text in octavo by Mr. Newton. These were published in February last, and obtained much appreciative attraction.

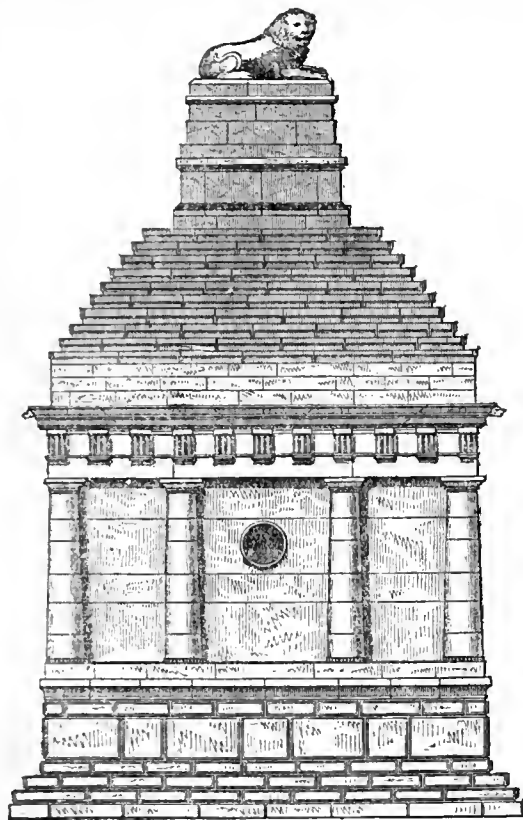
The author of the "Mausoleum of Halicarnassus Restored," is now by no means satisfied that Mr. Newton and his associates have arrived at just conclusions with regard to the nature and characteristics of the ancient Greek structure. He gives critical and analytical reasons for the lack of faith that is in him, and from the subjoined data, deduces materials for the elaborate drawings which ornament his book, and which he says are far nearer to the original designs than those of Mr. Newton. The bases upon which Mr. Fergusson proceeds to raise his superstructure are:—

First.—The passages in various ancient authors which describe the appearance of the building, or give its dimensions.

Secondly.—The actual remains of the building discovered in the recent explorations, and the measurement of the ground then obtained.

Thirdly.—The several tombs existing in Asia and Africa, evidently of the same type, and which afford valuable hints for the restoration.

Lastly.—The system of definite proportions in Greek architecture, which is not only most useful in suggesting forms, but also most valuable in rectifying deductions arrived at from other sources.



It must be admitted that the principles here laid down are clear and specific; but it will be for Mr. Newton and his friends to argue as to the conclusions at which Mr. Fergusson arrives.

We cannot undertake to solve so knotty a problem as that involved in the question of "Whose scheme of restoration is most near to the truth; Mr. Newton's, or Mr. Fergusson's?" Both gentlemen have evinced considerable ingenuity, and adduce strong evidence on behalf of their views.

In reference to the testimony afforded by ancient tombs as to the style of architecture of the Mausoleum, Mr. Fergusson introduces an illustration in the form of a structure which Mr. Newton discovered at Cnidus, and which he christened the Lion Tomb. That illustration we reproduce here, in order that our readers may observe the peculiar features of the ancient relic, and compare them with those of the Mausoleum of the rival restorers.

Whatever may be the impressions of those who venture upon the task of endeavouring to arrive at truthful deductions by following the leadership of the two gentlemen, as exemplified in their respective works, we can promise them an agreeable, though rather erudite task.

Perhaps, after all, the matter will have to remain in the company of speculative subjects for some time longer. Of the getting up of the work before us we must speak in high praise. We cannot quite agree however with Mr. Fergusson, when he states that it would be difficult to suggest any memorial which should more worthily commemorate the Prince whose loss the nation is still deploring, than a reproduction of "the monument which excited so much the admiration of the ancient world, and rendered the grief of Artemisia famous through all succeeding generations." We do not think either that the Memorial Commission will quite coincide with Mr. Fergusson on this point.

ISCA SILURUM.*

UNDER the above title has just been published a volume to which we have great pleasure in directing the attention of our readers. The particular district in which Caerleon is situated has long been celebrated for the discovery there of relics and remains of the Romans, and the talented author of "Isca Silurum" has previously published a volume entitled "Delineations of Roman Antiquities at Caerleon," with a supplementary pamphlet describing a Roman building. In fact, sufficient evidence has been adduced by the laborious researches of Mr. Lee, and other zealous antiquarians of Monmouthshire to prove, that for a long series of years the town of Caerleon was the residence of the Second Augustan Legion, which, from its protracted stay in Britain, obtained the name of Britannica. It also appears, from the terms in which the place is mentioned by writers of the Middle Ages, that it had been and was then, a town of considerable note. Caerleon appears to have had several names. In Gale's copy of the "Itinerary of Antoninus" it is termed *ISCE LEGVA AVGVSTA*—evidently, asserts Mr. Lee, a corruption of *Isca Legionis Secundae Augustae*. It was also called in the Ravenna list *Isca Augusta*, and *Isca Silurum*. Hence the first title of the work before us.

Although the author has, with much modesty, designated his beautifully illustrated volume a "Catalogue," it is really worthy a much higher appellation. It not only describes fully, and with singular erudition, the various objects of interest which enrich the Museum of Caerleon, but it contains essays by himself and others upon the various buildings and fortifications which were raised during the Roman occupation, and also many details in reference to the coins which have been found in considerable numbers in the neighbourhood of Caerleon. Into the question of the origin of the name of the town, which is discussed at some length and with much cogent and classical reasoning by the learned author, it is not necessary for us to go. The tracings of Roman buildings which Mr. Lee indicates, and the particulars of Roman remains which he gives, fall, however, legitimately within our sphere, and with those we shall endeavour to deal. The shape of the ancient fortress of Isca may at present be traced very distinctly, partly by the remains of the actual walls, and partly from an elevated ridge formed from their ruins. Like most other Roman encampments known to have existed in England and Wales, it appears to have been in the form of a square, with the angles rounded, and with an entrance near the middle of each side. That to the south-west led into a road now called the Broadway, and very probably to a ford over the river. It is to be regretted, that for many years before Mr. Lee and his coadjutors entered upon their interesting enquiries, the removal of stone from the ruined buildings, and their employment in the construction of modern edifices, had formed a remunerative occupation for the labourers of the district. The material advantages gained by the latter were undoubtedly at the expense of the scientific band who have subsequently occupied the field, and many antiquities which would have graced the Museum are thus for ever lost or destroyed.

Those portions of the walls of the fortress of Isca which still remain are of no great height—probably only from ten to twelve feet in the highest part from the ground outside. Many of the stone facings of the walls have disappeared in the way just described; and in these places the walls consist of a very irregular kind of masonry. The mortar, in general, is not mixed with pounded bricks, although this is the case near the corner of the wall, where strength was required. In the locality known as the Broadway, many valuable relics have been recovered, and those placed in the cases of the Museum are described and illustrated in the catalogue.

In 1855, the members of the Antiquarian Society, of which Mr. Lee is secretary, made some extensive excavations at Caerwent, and the results of these are described in the catalogue, by Octavius Morgan, Esq., M.P., and president of the Association. From this paper, which is accompanied by excellent lithographic engravings, we extract that portion relating to the Roman baths, which were then brought to light:—"Close adjoining the south-west corner of the wall, inclosing the tessellated pavement discovered in 1777, was a

* *Isca Silurum*; or an Illustrated Catalogue of the Museum of Antiquities at Caerleon. By John Edward Lee, F.S.A., F.G.S., Honorary Secretary of the Monmouthshire and Caerleon Antiquarian Association. London: Longman and Co., Paternoster Row.

rough heap or mound indicating the remains of former buildings. It was thought desirable to examine these, and excavation was commenced at the south side of the mound. A wall of very solid construction was discovered, and within this, at the depth of five feet, the men arrived at the door of a hypocaust. Some of the pillars, which were formed of sandstone, had been displaced, and among them there was a quantity of wood-ashes, with masses of slag. The excavation was proceeded with, and there was ultimately uncovered a small block of building, 31 ft. by 34 ft., exhibiting a complete set of Roman baths, perhaps the most perfect exemplification of a private suite of baths attached to a dwelling-house yet brought to light. Although it is not necessary here to go into the general question of Roman baths, it may be stated that the essential apartments of a Roman bath were:—the *frigidarium*, with the *piscina*, or cold water tank; the *apodyterium*, or dressing-room, which was slightly warmed; the *tepidarium*, a moderately heated chamber, where the processes of anointing, perfuming, shaving, and other such operations were performed; the *calidarium*, a strongly heated chamber, with a *calida piscina*, or hot-water bath; and lastly the *sudatorium*, raised to a high temperature with a dry heat."

All these arrangements were discovered at Caerwent, and it is clear, therefore, that the ancient conquerors of this island made themselves especially comfortable there, and introduced luxuries of which the natives had previously not even dreamt. The resemblance in some of their details of the Turkish baths which at present obtain in the metropolis to those of the ancient Romans is remarkable, and goes to demonstrate the truth of Solomon's words, "There is nothing new under the sun."

Mr. Morgan, in his elaborate and extremely interesting paper, describes very minutely the means and appurtenances with which the Roman baths were supplied, and has caused a model and plans to be made of the particular bath referred to. The model is deposited in the Museum at Caerleon, and the plans are copied on a reduced scale in the "Illustrated Catalogue." "One problem," says the writer, "remains unsolved, and that is where the Romans obtained water for the Caerwent baths." The brook is distant, and is dry in summer, and the village is now supplied from wells; and this we must conclude is the source whence it was procured by those who used the baths. To have carried the water by hand through the chambers would have been very inconvenient, and it is possible that there may have been some contrivance in the walls, now destroyed, for its introduction from the outside." Thomas Wakeman, Esq., contributes to the catalogue "Some Notes on the Early History of Caerleon," and in fact gives a chronological résumé of events connected with the ancient town, or city as it once was, from A.D. 892, when the Danes plundered it, down to the year 1236.

To the Rev. C. W. King has been entrusted the task of classifying the extraordinary number of coins which have been at various periods discovered in the district, and these are not among the least interesting of the contents of the Museum at Caerleon. Only four gold coins have been found in the vicinity, and those of chief numismatic interest in the list furnished by the reverend gentleman are the silver Carausius with the emperor on horseback. The rarity, the type and the workmanship of these coins constitute their value. The metal, too, of which they are composed, is much purer than that of other coins of the period.

It would be vain for us to attempt, within a short space, to enumerate the items of interest which have been collected in the Museum at Caerleon, and of which, in most instances, copious descriptions are furnished in the work under review. The people of Monmouthshire have just ground for pride in the possession of such an invaluable institution, and they are fortunate in having selected a gentleman well qualified for the onerous duty, to edit "Isca Silurum."

It would be unfair towards Mr. Palmer, the lithographic printer of Newport, to omit saying that, in the execution of the fifty-two whole page engravings which ornament the work, he has displayed an amount of ability which entitles him to the highest commendation. Mr. Lee himself was the artist from whose designs the engravings were made, and this with a view to lessening to the public the cost of the "Illustrated Catalogue." The volume is gracefully inscribed to Octavius Morgan, Esq., M.P., F.R.S., V.P.S.A.; and again we cordially commend it to the notice of antiquarians, archæologists, architects, and others.

EGYPTIAN RELICS.

THE results of Mr. Rhind's explorations in Egypt, and more particularly at Thebes, fully deserve that further consideration which we promised to give it, when on a recent occasion we were compelled to lay aside his book*, for the time, with but a very brief notice.

* Thebes, its Tombs and their Tenants, Ancient and Present. Including a Record of Excavations in the Necropolis. By A. Henry Rhind, F.S.A., &c.

Not satisfied with simply describing the results of the excavations, he offers at the same time a general view of Egyptian sepulchral facts. Nor is the value of his observations lessened to any considerable degree that although, from various circumstances, the results are but now given to the world, the researches from which they arose were made some four or five years ago. The sepulchral evidence on early metallurgic practice is a chapter of great value, and one that cannot fail to assist the enquirer in coming to a conclusion on what has hitherto been matter of much dispute. It has been customary, says Mr. Rhind, to suppose that the absence of iron relics among the innumerable spoils from the old tombs of Egypt, was sufficiently accounted for by the natural tendency of that metal to decomposition, especially liable to be hastened by the action of the nitrous soil or sand of the country. It is, however, objected in answer to this, and with truth, that as a general rule, the contents of the tombs were not in contact with the soil, for while the sand might, and did drift up the doorways, and into the outer chambers and shafts, it seldom reached the sepulchral deposit, even in cases where it had long previously been rifled and neglected; besides this, there was an almost total exclusion from air, and damp, all conditions favourable to the preservation of that metal. In carpentry, not only was iron not used, but it appears, from the relics, that no metal of any kind was employed, all framing having been effected either by dovetailing, mortising, or by wooden pins. Those who, following the dictum of Rosellini, insist, that iron and steel must have been materials in common use, because without them they could not have cut and sculptured granite, forget that, as Mr. Rhind recalls to recollection, the Mexicans performed similar tasks, and even graved emeralds with the highest finish, by the aid of bronze implements. Bollaert, in his "Researches in South America," mentions that the Peruvians perforate emeralds without metal of any kind; they use the pointed leaf of a wild plantain, with sand and water, and succeed perfectly. There would seem to be no real difficulty in the execution of any of the Egyptian work with which we are acquainted by the aid of bronze implements. Workmen's tools of various kinds of that metal have been discovered, and are familiar objects, having been preserved in many museums. But it is not so well known to what degree of excellence the quality of the metal attained. Bronze daggers of the earliest date, rival the elasticity of steel at the present day: carpenter's saws, chisels, fish-hooks, tweezers, and a rarer relic, a needle, in the possession of Mr. Rhind, are all bronze. True, some few objects in iron have at various times been discovered, under conditions which have perhaps too hastily been accepted as proofs of antiquity, but the conclusion must by no means be accepted without further enquiry. For instance, Colonel Vyse found a piece of wrought iron in an inner joint of the stones near the mouth of one of the air channels of the great Pyramid; but as that structure had long been the subject of constant quarrying and violation, the evidence of antiquity cannot be regarded as conclusive. Then Belzoni found an instrument of the shape of a modern sickle, under a sphinx, at Karnak, but the sphinx, with the rest of the group, were lying in an "irregular and confused manner, as if hidden in a hurry," so that there could be no evidence as to the date of the sickle found under such circumstances, and Belzoni, it must be inferred, found no other article of iron throughout the whole of his researches. Dathanasi wrote, "After eighteen years of laborious research, and after having opened so many tombs in Thebes, and in Abydos, I have not met with the most trifling article of ironware of Egyptian origin." It is believed that, of the few objects of iron which have been brought from Egypt at all, nearly the whole of them belong *certainly* to what is called late time in the archæology of the Nile Valley, and the author of "Thebes" believes that it is the case, "that there is no recorded personal observation, of the finding of any iron objects, under circumstances, or in connection with other remains, which would satisfactorily prove their having been contemporaneous with remains of the older date in question. For example, Colonel Vyse intimated that the Duke of Northumberland was stated to have brought an iron weapon from Egypt; but the Duke of Northumberland informs me that he knows of no such object." Indeed, it would appear, that in every case in which iron relics have been discovered in Egypt, there is invariably a link wanting in the chain with which it is sought to connect them with early ages.

The fact is, the modern demand for relics, Egyptian as well as others, has produced a certain supply independent of that obtained by actual research; and no doubt to their supply must be ascribed many articles which have come to be looked upon as veritable antiques. How far this applies to relics from Egypt may be readily gathered from the ninth chapter of Mr. Rhind's volume, wherein he describes "some characteristics of the mode of dispersion (of relics), whether by traffic or otherwise, which has brought, and is still bringing, so many Egyptian relics into public and private collections."

The spoliation of Egyptian monuments dates from the time when

obelisks were carried away to be re-erected in the imperial cities of Rome and Byzantium; and, again, from the close of the middle ages, when mummy, as a drug, was so favourite a recipe, that dealers embalmed their dead contemporaries to meet the demand which the ransacked tombs could not supply. By the earlier half of the seventeenth century, Kircher had made considerable progress in the mysteries of the hieroglyphics, and about 1655 Thevenot, a French traveller in Egypt, describes the Arabs of Sakkara as continually occupied in digging among the tombs for the purpose of selling the objects which they might discover. The first collection, however, of any importance procured systematically, was formed by the scientific commission which accompanied Napoleon's military expedition in 1798. A few years later the pursuit was in full progress on an extensive scale; and from that time to this it has never ceased. The chief collectors having been the consular representatives of England and France, Mr. Salt and Signor Drovetti, the example of organising a regular search was soon followed by others, and particularly by Belzoni, when, after a rupture with Mr. Salt, for whom he had been acting, he set to work on his own account. "The history of relic-gathering in those days is that of one long imbroglio. There were quarrels and even fights between the working parties of rival collectors. There were difficulties from intrigues and counter-intrigues with corrupt local governors. There were disputes between employers and employed, as to the terms of service. There were misunderstandings in the communications of sellers and Government buyers in Europe on involved questions of price and public duty. There were even, at least locally, sparks of national ill-feeling aroused, chiefly between English and French, in consequence of the right of property in tombs, or such like, assumed to vest from priority of discovery, being sometimes infringed." Later, in 1828, the united French and Tuscan commissions, directed by Champollion and Rosellini, began their labours, the chief object being the investigation of the monuments and the publication of the results. The acquisition of antiquities, however, naturally followed; and the Louvre and the museum at Florence were greatly enriched. In 1842-5, a Prussian expedition, under the direction of Lepsius, made large collections in Egypt for the Berlin Museum. In 1851, and succeeding years, the Louvre again received most valuable additions by M. Mariette's discoveries: and, more recently, the Egyptian Government itself has begun the formation of a collection, under the agency of the same investigator. But, notwithstanding the magnitude of these official operations, they have been far exceeded by the collective efforts of private persons, such as Passalacqua, Cavighia, Cailliaud, and others, who "brought together considerable treasures, by engaging, directly or indirectly, in excavations; and most of these have found their way to the museums of Europe. Other collections were formed by European residents in Cairo and Alexandria, whose tastes or opportunities led them to seize the advantage of their position, and secure from the *fellah* diggers, or the class of go-between dealers, any really good relics which then, from a less exhausted source, came more numerous into the local market." Besides these there was the native traffic by the villagers, who, particularly at Geezeh, Sakkara, and Thebes, were constantly working among the tombs, sometimes on their own account, and sometimes under the guidance of an employer. Dathanasi lived for eighteen years at Thebes, engaged in this manner, so that one would expect to find the whole of the remains thoroughly ransacked. Such is, however, far from being the case, so well as can be judged; but the investigations, so far as they have gone, have been attended with sad destruction to the monuments, and not only by those who have not hesitated to use the temples as quarries, or the *fellaheen* who burn suitable stones into lime; for the scientific expeditions have not been blameless in the matter. Mr. Rhind, while admitting the difficulty of determining where the line is to be drawn, instances the case of the Prussian expedition under Lepsius, who, in the most magnificent tomb in Egypt, that of Sethi I., where corridors, halls, and pillars were in perfect preservation, is stated to have overthrown a decorated column to secure a portion of it, leaving the remainder a scattered relic on the floor. This, and other doings of a similar nature, do not contrast well with the veneration with which these remains of ancient art were regarded by Wilkinson, Hay, and Burton, who about the same time laboriously examined and sketched the figures on the walls by the dim light of wax candles, rather than injure the paintings with the smoke of torches.

But let not the collector of Egyptian antiquities believe too confidently in the genuineness of relics, because they come from Egypt, for the production of spurious relics is carried on systematically, and to a considerable extent. The ordinary *fellaheen* shape soft stone into imitations of large scarabæi; fasten up scraps of papyrus into the semblance of small untouched rolls; char handfuls of their last years' crop, and mix it with bituminous dust to give the grain the colour of wheat from the tombs; scratch the royal cartouche on an ordinary vase, and other deceptions, which, however, fail to impose on

the experienced. Certain dealers at Cairo, among whom are Europeans, attempt more than this; they engrave inscriptions accurately copied from a set of viscera vases, on others that may not possess such a feature, and whose value is thereby increased fivefold; then bronze figures of deities of the rarer types are multiplied with unimpeachable accuracy; the originals, even, being sent to Italy for the purpose. One Ali Gamooni, at Thebes, is great in the production of scarabæi, which form his chief manufacture. The material he employs is generally that which the ancients themselves also largely employed, a close-grained easily cut limestone, which, after it is graven into shape and lettered, receives a greenish glaze by being baked with brass filings. Working in this way, says Mr. Rhind, some of his copies are singularly good, and as for his examples of the unimportant coarser sorts, which the old Egyptians with little care seem to have produced in the same manner, they are not to be distinguished from antiques.

It seems that, twenty years ago, Ali Gamooni was engaged in this trade; for a writer on Egyptian subjects notes that he then furnished Ali with appliances to aid his already manifested talent, in the hope of flooding the local market with curiosities, and so saving the monuments from being laid under contribution (1). Since that time, however, the ambition of Ali has led him to more important forgeries, and on the faith of Mr. Rhind's having been several times in his workshop, and having seen the mysteries of his art, he one day presented a sketch of a group of hieroglyphics, neatly drawn in pencil by himself, to beg advice as to his engraving them on a scarabæus. The text, he said, he had copied accurately from a wall of Medinet Haboo, but he added, that for a cartouche with a king's name, which the original there contained, he had substituted another which he found to be of uncommon occurrence, with the view of preparing a rarer, and therefore more valuable relic, and he wished particularly to ascertain whether there would be any inconsistency between the adopted name and the inscription. The narrator is not aware if this had been his first attempt in so remarkable a field, but remarks that the result of a few happy shots in this direction it is rather startling to contemplate, if we remember that under some of the kings, and particularly Amunoph III., the practice was much followed, of inscribing large scarabæi with important records; the frontiers of his empire have been defined on the authority of four such relics, and an incident so important as the first indication of the introduction of an heretical sun-worship has been founded upon one of them.

We may return to Mr. Rhind's book; but with regard to relics, may repeat with him, that the time is fully come when Egyptian antiquities, of certain classes, must have a further voucher for their authenticity than merely that they have been carried from Egypt.

DISTINGUISHED MEN OF SCIENCE.*

WE are glad to be able to inform our readers, that a large engraving has just been completed by Mr. Walker, of 64 Margaret Street, Cavendish Square, in honour of the men of science who have done so much towards the establishment of our present commercial prosperity. This work, which may well be called historical, represents fifty-one illustrious men, living in the early part of the present century, assembled in the Upper Library of the Royal Institution. The picture is divided into three groups, and comprises authentic portraits of our greatest inventors and discoverers in astronomy, chemistry, engineering machinery, and other departments of science. The central group represents Watt, Boulton, Brunel, Dalton, and Cavendish seated, and surrounded by Smith the geologist, Wollaston, Davy, Maudslay, Bentham, Telford, Murdock, Rennie, Mylne, Chapman, Jessop, and others. On the right are Crompton, Cartwright, Tennant of Glasgow, Francis Ronalds, and Charles, Earl Stanhope, engaged in conversation; while a little behind stand Bryan Donkin, Troughton the optician, Miller of Dalswinton, Synnington, Trevithick, &c. The remaining group on the left is formed by Herschel, Maskelyne, and Jenner, surrounded by Bailey, Frodsham, Leslie, Playfair, Dollond, Dr. Thomas Young, Brown the botanist, Davies Gilbert, Sir Joseph Banks, and Captain Kater, celebrated for his pendulum experiments. The grouping of so large a number of figures must have been a difficult task; this has, however, been successfully accomplished by John Gilbert, the designer of the original picture (drawn by J. F. Skell and W. Walker), who, by a skilful combination of various attitudes, has given both grace and ease to the figures represented. The engraving has been executed by William Walker and George Zobel, while the greatest care seems to have been taken to secure faithful and authentic likenesses. The work is rendered complete by a series of well-written memoirs, drawn up by Mr. Walker, jun., to accompany the engraving;

* Published by Messrs. Walker and Son, 64 Margaret Street, Cavendish Square. The book of Memoirs also to be obtained of Messrs. Spon, 16 Bucklersbury.

this book, we are glad to see, is also published separately, as we should think there would be many who, though unable to purchase the engraving, might still like to possess the memoirs.

LABOURERS' COTTAGES, AND THEIR BEARING UPON ARCHITECTURE.*

(Concluded from our last.)

I HAVE as yet said nothing upon one part of my proposed subject,—The bearing of Cottage-building upon Architecture, properly so called. There are several general observations which I have made which obviously apply equally to the simplest and the most ornate buildings; and there is one particular feature, the cottage treatment of which seems to me, though unexpectedly, yet exactly to tally, with what I should recommend for larger houses also,—I mean the treatment of the staircase. We have seen how, in the cottage, by far the most economical, as to space and cost, as well as the most convenient plan, is that which attaches it to, not complicates it with, the general block of the house. I think the same principle should be applied to all staircases, making them rather excrescences, or annexes, than contained within the main walls of the house. I hardly ever see a plan for a modern house, where the insertion of the staircase does not seem to spoil the arrangement and communication of the rooms—at any rate to curtail the hall or darken the passages; and I have seldom found a difficulty in finding a place where, if the staircase were annexed to the general block of the building, the ill-arrangement might not be obviated, and many additional conveniences gained. As to the lighting and airiness of the staircase itself, and the external beauty so naturally obtained, I need not say a word. We all know how much the finest examples of old domestic architecture owe, both internally and externally, to this separate treatment of the staircase. I would almost believe that, by the improved combination of spaces, which this gives to the general plan, even the additional expense would be small. Certainly, if the smallest margin were allowed for effect or ornamentation, nowhere would it be better bestowed; and the variety and originality of design which such a feature would offer, and almost necessitate, would, I think, advantageously compensate for the absence of much applied decoration in other parts.

Nor need I say how strictly applicable to the highest class of buildings are those principles which are absolutely imperative in the cottage: viz., that effect should be obtained not by straining to produce it, but by carrying out in good proportion, and combining in due harmony, what is essentially requisite for the convenience of the house; how entirely all shams and concealed constructions are to be eschewed; how the interior wants of the house must give the character to the outward elevation, and not a preconceived elevation warp the interior arrangements to its lines. I am convinced that, of all the so-called picturesque cottages built during this century, the external view was drawn before the ground plan was designed—indeed, fifty years ago, I think that this must have been the professional practice with regard to all classes of buildings. And even now, I fear, the picturesque idea of what is wanted for a certain site floats through the mind, before the prosaic wants of the future occupier are listened to.

But there is yet one still more distinctive practical bearing of cottage-building upon high architecture which I would insist upon. It is a Utopian idea to suppose that we shall ever again acquiesce in a single national style of architecture. The ages of the overpowering influences of master-minds, and of the crushing power of dominant majorities are gone by, in that as in other things. Individual mind will assert its independence, though often, indeed, more to the satisfaction of the person than of the community. And we may expect, more and more, that crotchets will be prominent, and that "follies" will be built—only this divergence will become so common that they will no longer be called "follies." Still, one style may be the most competent judges be deemed more suited to our climate and requirements than another, and, if ably treated and proved by experience to be so, it will become generally adopted, and so, in a limited sense, be national. For ultimate success, it is necessary that it be both founded on the examples of past times and developed to the exigencies of the present. There is nothing good in old architecture which it must eschew—nothing good in new discoveries of material or construction which it must not adopt. It must be free alike from pedantry and new fangledness. Eclectic, in one sense, it must be; but it must have a pervading principle, and this, I think, it must seek whence the principles of all our great institutions are derived in the past history of our own country. But the style will only establish itself by its success. No foregone theory is of any avail. It must prove its own self "Solvitur edicando." I need not say that I myself would have no confidence in the permanence or prevalence of any style in England that was not founded on our old English architecture; and that that is a feeling ingrained in the national mind, the history of cottage building shows. Whenever far in the country, away from schools of design or provincial Pecksniffs, building has gone on traditionally, uninterfered with by lectures or books, there the old English style has prevailed; and what are really cottages of national Gothic (if I must use that term) have been built within the last fifty years.

While the fashion of the day raised the neighbouring squire's hall in Jacobean, Caroline, Dutch, Palladian, Grecian, mock-Gothic, Italian, Byzantine, one after the other, whatever happened to be the prevailing mode in London circles, the village mason in many stone districts of the midland

counties went on by his rule of thumb, following the old forms of doors and windows, grooving the same mouldings, fixing on the same heavy hinges, glazing with the same quarries—making the modest house he was building for himself the veritable offspring of the abbey, and the castles, and the granges which were lying neglected in ruin around him. It is curious how, every now and then, in out-of-the-way villages, we come to windows inserted in the churches within the last two hundred years infinitely more true in character and detail to the style of the church than the insertions of revived Gothicism. But in cottages and small farm-houses the tradition of national style was absolutely unbroken; the mouldings, indeed, latterly became more flat, and the elevations more insipid; the impress of the outside wood was visible enough upon them to show that it was not mere Chinese copyism, but a living style; and so continuous was it, that I feel sure that in the county of Northamptonshire alone a diligent student might make a catena of such buildings from the fifteenth century to the nineteenth, from the inscribed dates still existing, without an interval of more than ten or fifteen years in any generation.

But this tradition has now almost, if not entirely, passed away. With the carpenter it is certainly extinct, and his moulding planes are now of the so-called classical type, and the few books to which he has recourse all point to the same stereotyped patterns. All handicraft work has now got into this one groove; and architects will, I think, bear me out in saying, that if a common workman (I will not say in ecclesiastical, for the demand for churchwork has already formed a school of its own, but) in domestic work, if a common workman is left for a moment to his own devices, however mediæval may be the character of the designs on which he is engaged, he at once falls into the conventional classic style of his apprenticeship. It is this which gives an unreal character to the prevalent mediæval architecture. A house is built, in which the architect has given the most correct forms for all the leading features, nay, has drawn out all the details, preceded or characteristically developed, in the style he has adopted; but no sooner is the workman left to finish off by himself a shutter-panel or a door-handle, than the vulgarest type of the workshop is straightway introduced, marrying the effect and reality of the whole composition.

Now to meet this, I know of no way but by established architects condescending to give to the cottage-builder the most elegant yet the simplest forms that the commonest use of brick and wood can adopt. Architecture of course has risen, historically, from the hut to the palace; but, when once established as an art, it has descended in its influence from the palace to the hut.

It would be pedantry to suppose it possible to reverse this order now; and to argue that our new style, or new development, must begin from the simple elements of good cottage building; and so rise till it modified the mansion or the church. But practically, I believe, we shall never have a real living style, till we have imbued the workman with true principles in the use of the wood and the brick with which he makes the doors and cornices of his own dwelling. We must, in the instance of the carpenter, teach his good sense to use the simple chamfer, and his fancy to design the pleasing stop-chamfer, in the place of the mouldings and dovetailing, to which he is wedded. We must make him, as it were, begin afresh; using wood in the bold natural style in which our ancestors used it five centuries ago, but without pedantically tying him to any normal forms. If we could once get true principles of carpentering into our cottages and our builders' workshops, we should have the base of a national style to work upon, and need have no fear of missing a right development. Now, in the commonest buildings there is a waste of labour in bad forms and surface polish, which are much more costly than well-proportioned realities; and the simple beauty of constructional form is almost always distasteful to the workman, and he labours at it against the grain. How we are to attain the outward truth of construction, whether by beginning to educate in our workshops and cottages, or by carrying it down to this humbler sphere by the successful results in higher art, it is not for me to say; but I believe that if we could, as a rule, get rid of all shams and false ornament in our cottages, the improvement would gradually rise upwards, and our builders would not be, as now, working in a conventional groove of their own, unpermeated by any living principle, and with no sympathy with the higher art of the architect.

It is on this ground that I would ask the most exalted architect not to deem cottage building beneath his care. I think he would there learn reality. He would work up from the rudest form of materials and constitutional necessities, to the most precious substances and the highest art. If I were conducting an architectural studio, I should first put before the student, not an elaborate frieze, or a diapered panelling to copy—not a portion of the Parthenon or of Westminster Abbey—but a well-designed and well-fitted cottage; make him learn how to fix the lintel of a door in carpentry, or chamfer the brick of a window-jamb—and so gradually carry him onwards to higher things. We seem greatly to want, in an educational view, a return to simplicity. If there is an architectural sketching club, I wish they would take for a subject at their next meeting a five-chambered cottage. I believe they would find it a more difficult problem than a Palladian hotel, or a mediæval town hall. But till real genius has undertaken this, and given the key-note to the proportions of windows and chimneys, and the details of doors and staircases, we must be content with the abortions which exhibit themselves at model cottages, many of which, while failing in real accommodation, are eyesores to every educated beholder, and seem absolutely to rejoice in their ugliness, as if the absence of beauty ensured convenience of plan. I am convinced that there is no

* Paper read by the Reverend Canon JAMES at the Architectural Museum, South Kensington.

necessary connection of ugliness with usefulness in a cottage, more than any other building. Indeed, I believe that the true expression of usefulness will be always beautiful; but then, in the present state of art-work education, we cannot leave this expression to the bricklayer and the carpenter, but must look to the refined mind of the true architect to condescend (if it be so considered) to design the building under which the man, who carries out his noblest ideas into form, lives day by day, and imbibes unconscious lessons.

A simple "handbook" of good primitive forms for wood and brick, and stone construction—with the component parts of structures in good proportion, and working drawings and sections of details in each material, such as might be required for their own homes, put into the hands of the apprentices of the present generation, might in time work a great and glorious revolution in British art. I wish the idea would commend itself to some one of the distinguished professional members of our architectural museum which professes especially to take the art-workman under its care.

The idea may seem too trivial and simple; but I own, that among the many more ambitious propositions for raising the character of our national architecture, I can myself see no one that has better promise of ultimate success.

FOXHILL, NEAR LEEDS.

THIS house, of which we give an engraving on the opposite page, is situated at Weedwood, a few miles from Leeds, and is built on the brow of a thickly-wooded bank, shelving rapidly down to a small streamlet, the Adel Beck (beck being the Yorkshire name for a rivulet). It is built of sandstone, partly quarried on the site and partly obtained from the Weedwood quarry, which is close at hand. From the flat roof of the tower, over the entrance, very extensive views can be obtained on all sides, as there is very little, if any, higher ground for many miles round. The view shows the south-west and south-east fronts. The library window and large bow of drawing-room are to the south-west; the smaller bow of the drawing-room, that of the dining-room, and the window of the morning-room between them, are to the south-east. The receding wing contains nursery accommodation on the first floor; kitchens, larders, &c. (north-west); and butler's pantry, servants' hall, &c. (to south-east), on ground floor; and wash-house, laundry, wine cellars, &c., on basement story, which is entirely above ground on south-east side.

The house is entered by an open porch in the tower, hall, with cloak-room and saloon, from which the four principal rooms are entered, and from which the principal staircase ascends. The servants' rooms are on the top story of the main building.

The glass porch, seen to the right of the dining-room window, is to the garden entrance; and the conservatory stands immediately in front, at the end of the terrace flower garden.

The contractors are,—Whiteley, mason; Winn and Pawson, joiners; Watson, slater; Webster, plumber and glazier; Singleton and Tennant, smiths; Branton, plasterer; Wood, painter.

ON THE FORMATION OF A NATIONAL MUSEUM OF ARCHITECTURE, VIEWED IN CONNECTION WITH ITS BEARINGS UPON MEDIEVAL ART.

ON Tuesday evening, Mr. GEORGE GILBERT SCOTT, R.A., F.S.A., delivered a Lecture in the Theatre of the South Kensington Museum, before the members and friends of the Architectural Museum, "On the Formation of a National Museum of Architecture, as viewed especially in its connection with the Mediæval Styles." The chair was occupied by the President of the Architectural Museum, Mr. A. J. B. BERESFORD HOPE, who briefly introduced the lecturer.

Mr. Scott said:—

Having been somewhat actively concerned in the first establishment of the Architectural Museum,—and the collection there made having been either temporarily or permanently deposited in the hands of a government department, who are supposed to have in contemplation the formation of a National Museum of Architecture, I have thought it not out of place to offer some suggestions as to what such a National Museum ought to be; but, in doing so, to direct my attention more particularly to that part of it in which I feel most interest—that which would illustrate the architecture and the arts of the middle ages.

A museum may be defined as a depository in which objects, illustrative of science and art, are collected and exhibited for purposes of instruction and study.

Its great uses are to facilitate the studies of those who cultivate the arts and sciences which they illustrate, and to excite interest in them in the minds of others. They have also a secondary use, as being places where objects of interest, which would otherwise be likely to be lost or dissipated, or to perish from decay or other causes, may be cared for and permanently preserved.

When the museum is public or national, it performs, or should perform, these duties, on a grand scale, and for the use and benefit of the public.

Limiting our consideration to a museum of art, I would say that its directors ought to devote their energies primarily to collecting such objects as are worthy of the study to the practical student of art, and as would tend to form the public taste upon a true and healthful standard. Secondly, to the illustration of the history of art in its various schools and periods; and

thirdly, to the conservation of such movable specimens as would otherwise be in danger of being lost or destroyed, provided such works are of actual merit or of value as bearing upon art-history.

Concentrating, again, our attention upon architecture and its subsidiary arts, let us endeavour to apply to it the general rules above stated.

An architectural museum should illustrate the history of architecture, and it is hard to conceive of anything more interesting than a collection which would really and honestly perform so noble a duty.

The history of architecture is the history of the world; it is the history of the changing power and dominion of races and nations; it is the history of human thought, and of the growth, the fluctuations, the decay, and the revival of human civilisation; and worthily to illustrate such a subject would be indeed a noble undertaking! This should not, however, be the primary aim. The great and vital object to be aimed at is the actual promotion of art amongst ourselves, and it is to this object that the best energies of those engaged in such a work should be directed. In the first place, it is pretty obvious that, while illustrating in their degree other classes of architecture, such a museum should be mainly devoted to the two great classes of architecture which are actually practised amongst ourselves, and which are familiarly, though somewhat unmeaningly known as "Classic" and "Gothic."

It may be asked why these two classes of art should be selected from among the multitude which have prevailed in different ages and countries. Is it merely from the accident of their chancing to be practised by us at the present day? By no means. The reasons are founded both upon history and upon intrinsic merit. Classic architecture founds its historic claims, firstly, upon the great fact that it originated among those nations of antiquity whose glorious privilege it was to unite in one main channel the several streams of the civilisation of the ancient world, to collect and concentrate all that was worthy of perpetuation in its previous course, and to bring it, with its arts, sciences, and literature, to the highest perfection which they attained; and, secondarily, upon the fact, not much less important, that what remained of the civilisation of these favoured nations of antiquity supplied the germ from which a second civilisation sprang—that of which we now enjoy the blessings.

Gothic architecture, on the other hand, founds its historical claims on the fact that it is the indigenous architecture of that family of nations to whose custody that new civilisation was committed, and that it belongs to ourselves as a leading member of that family; and that, though it has for some centuries been superseded by the revived architecture of the ancient world, it is now in its own turn revived by those nations among whom it originated, and is familiarly used by them side by side and on equal terms with that which had for a time supplanted it.

I will not dwell upon the former of these branches of art; but will now concentrate my attention upon that in which I personally feel the greatest interest, and the illustration of which, through the medium of a national museum, is the subject of my present paper.

I will first state—what often seems to be lost sight of—that it was not the historical claims of this style of architecture, strong though they are, which brought about its revival. Its opponents often seem to suppose the converse of this, and to think that, by directing their arguments against those claims, they shall undermine a movement which, gloriously supported though it is by historical claims and associations, originated wholly in an appreciation of the merits and beauties of the architecture, and its suitability to our wants. On this subject, however, I will not dwell further than to say that if you do not feel the beauties and perceive the intrinsic merits of this wonderful style of architecture, I fear it would be hopeless for me to attempt to convince you of them. If you wish to know my views on this point in detail, I will take the liberty of referring you to the first and the last of my lectures at the Royal Academy. They are reported in the *Builder* and *Building News*, in March and April 1857, and in February 1860.

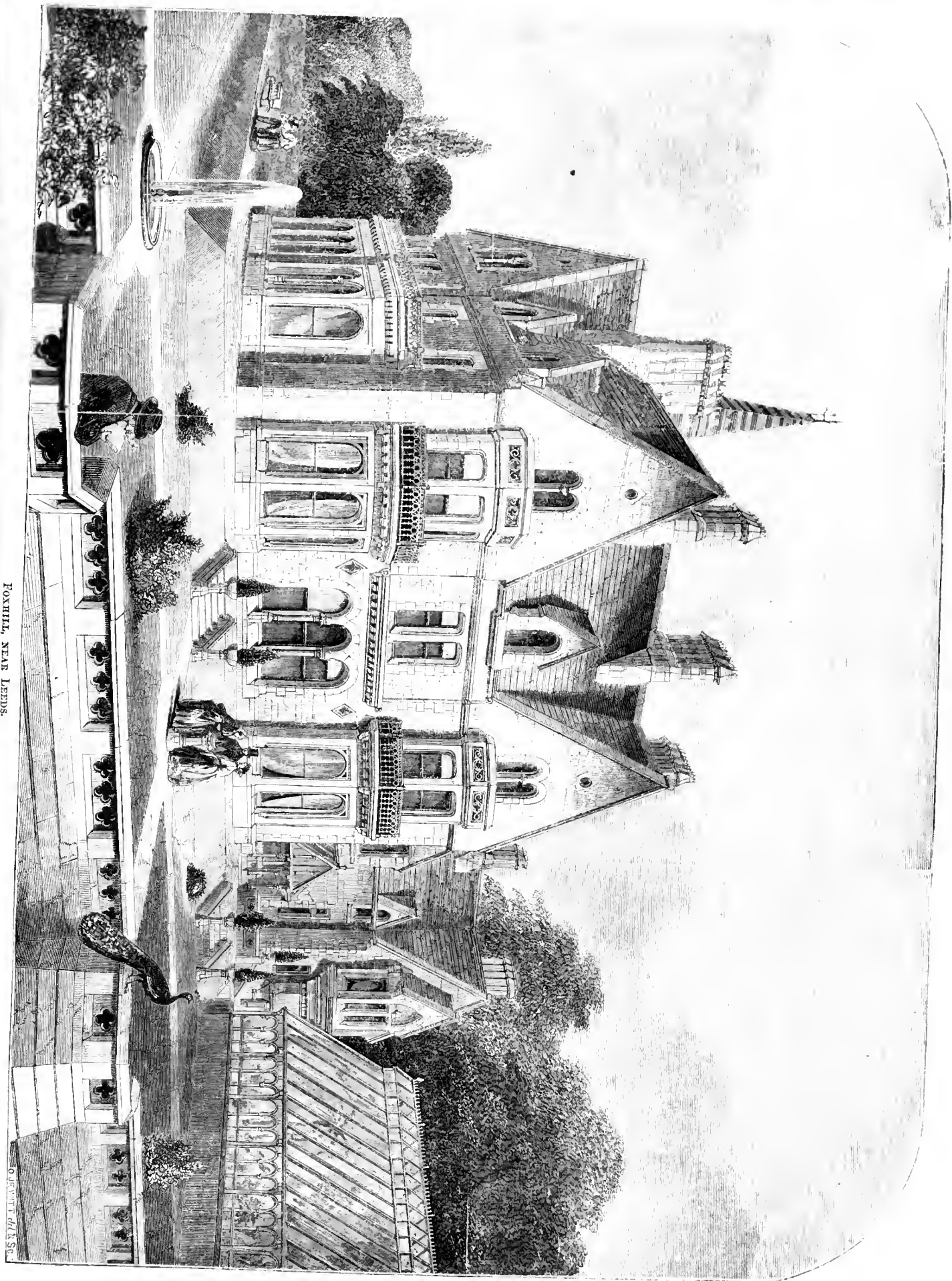
Now, let us digress for a short time to consider what are the means by which a practical art like architecture is to be most successfully learned and its advancement best promoted.

Architecture, it should never be forgotten, differs from the sister arts of sculpture and painting in this great and most important quality; that its productions are not the actual handiwork of the leading artist himself, but that it unites under its banner not only its two noble sister arts themselves, but also an almost innumerable train of subsidiary arts, each of which contributes its quota towards the perfection of the architect's work, and vies with others in rendering it noble and magnificent. When we speak, therefore, of architectural instruction, we mean, not only that of the architect himself, but of all the artists who work under his banner.

It is a general fault in England, at the present day, that those who follow a practical art take too low a view of its artistic as distinguished from its practical element. Thus, with our manufactures, the workmanship is often excellent; the taste very rarely so. Our artisans are often giants in mechanical skill, but pigmies in art.

The same has been the case with the arts subsidiary to architecture; and, though a great revival has taken place, those who have advanced the most best know how great is still the need of reformation.

This reformation must, however, begin at the fountain-head. The same precedence of the mechanical over the artistic which has obtained amongst our manufacturing and our architectural workmen, has existed also amongst architects themselves. We do not wish to be less practical—far from it!—but to be more artistic. And, if we aim at raising the architecture of our day as an art, we must begin by giving a more distinctly artistic tone to the education of our architects. The absence of any recognised and



FOXHILL, NEAR LEEDS.

[The following text is extremely faint and largely illegible due to the quality of the scan. It appears to be a multi-column document, possibly a ledger or a list, with various headings and entries. The text is organized into several distinct sections, some of which are separated by horizontal lines. The overall structure suggests a formal record or a detailed report.]

defined facility for obtaining the class of instruction required to supply this very general need, is one of the greatest hindrances to the advancement of our art. The Institute of British Architects have been considering for a long time past the organising of a severe examination of young architects; but they have never, to my knowledge, taken any step to aid their education. The junior institution (the Architectural Association) have, in some degree, taken the matter up, and have established classes for mutual improvement—a step worthy of all praise, and the furtherance of which merits the serious attention of every lover of architecture.

If there are present any students of architecture, let me earnestly and seriously press this subject upon their attention. In an architect's office you can learn the more mechanical and business-like parts of your art; and you there, and there alone, learn the application of such artistic skill as you may possess to actual and practical work; but that *artistic skill itself* must be acquired elsewhere, and by your own individual exertions. I wish it, however, to be distinctly understood that the artistic skill I am speaking of relates to *applied*, not *pictorial*, art; that which will make your buildings noble works of art, as distinguished from that which only enables you to make pleasant pictures of them. This last-named class of art is not to be despised; it will further your interests. If you are also an artist in the higher and more practical sense, it will do good by commending your good designs to public favour; while if you fail in skill of this higher class, it will do great harm by obtaining favour for your *bad* designs.

When real architectural art was highest this pictorial power was not much cultivated. It is not infant *architectural* skill, but only the means of promoting the adoption of the approval of your designs, whether good or bad. As bad designers often possess it, or can obtain its aid, do not by any means neglect it, or you will give them an advantage over you; but always remember that, like eloquence, it is a mighty engine of good or evil, according as that which it commends to popular favour is noble or vile. The artistic power, however, which I am urging you to cultivate is the power of making noble designs, and of clothing them, when circumstances permit, with noble decoration, whether in the form of architectural carving, sculpture, painting, or other decorative art. The first part—the power of actual architectural design—cannot be acquired without the most careful, determined, and continued study of existing works, accompanied by a constant, though not a self-confident, criticism of their merits and their faults. It is ridiculous to suppose that such an art as architecture is to be learned without the most careful study of its existing productions, or that originality is likely to be developed upon a basis of ignorance; and it is equally unlikely that excellence will be attained solely through the medium of knowledge, without the most jealous and careful training of the eye to the most delicate and scrupulous perception of the right and the wrong in form and proportion. The want of this is the most crying sin in modern architecture, especially, I fear, in this country. Continually is the more cultivated eye offended by disorders, which in music would set the very teeth on edge. I know not how to advise you on this point. This delicacy of perception is in some degree intuitive, but that it is not wholly so is proved by the fact that the works of some periods are nearly all harmonious, while at other periods this harmony seems only occasionally to have been attained. The only rule I can suggest is the *jealous cultivation of the eye*. As the greatest of moralists has said, "Keep thy heart with all diligence, for out of it are the issues of life," so may one say to the architect, "Keep thine eye with all diligence, for out of it are the issues of art." Never allow your eye to get accustomed to or to condone errors of proportion, even in works which in other respects you venerate for the noble art which clothes them, and much less allow of any deliberate error in your own designs. To avoid these blemishes, sketch your designs over and over again, no matter how slightly and roughly, rejecting vigorously everything against which the eye rebels, and never permitting a proportion which it has once condemned to remain even for a minute before you, for ocular perception is most delicate, and its instincts may be blunted by dwelling even for a few seconds upon what its first impression saw to be wrong. Never clothe a form with detail or with pleasant drawing till its proportions have been thoroughly sifted and rigorously corrected; and if you fear that you have, by dwelling too long or too indulgently upon what you have sketched, prejudiced your eye in its favour, put it away and attend to something else, or take the opinion of some unprejudiced person in whose correctness of eye you have confidence; for first impressions of another will often correct your own.

As to obtaining a knowledge of architecture, I cannot too often or too strongly urge careful sketching from first-rate examples. The student of classic architecture is under a disadvantage, as its original and best examples are in other lands; but with those who pursue the other great branch of architectural art, the case is very different; for though in most parts of Europe he will find constant and ever-varying objects of study, he can never go far from home without finding among the monuments of our own country productions equally deserving and equally instructive. To the student, then, of Gothic architecture I would concentrate my advice on this point in one word—"SKETCH!" And, if any one advises the neglect of this, I assure you that he stands *ipso facto* self-condemned as a false teacher. I want you, however, to add to this a great deal more. I want you to obtain distinct and precise instruction in art in all its bearings upon architecture. I want to urge upon you to study figure-drawing, animal-drawing, the drawing of foliage, whether natural or architectural, the combination of figures and animals with foliage, the designing of coloured decoration in all its branches, and of every other decorative art which

bears upon architecture. I want to urge upon you the necessity for the systematic learning of all these kinds of drawing, and the obtaining of a perfect mastery of them; and not only this, but that you should learn, in some degree at least, the actual practice of these arts. Human life is not long enough to do the latter thoroughly; but now, in the days of your youth, you can do it to a certain extent, even at the sacrifice of a few frivolous amusements. You have embarked on a noble art. Make its cultivation take the precedence of all inferior pursuits. To effect this, I am disposed to think that combination is necessary. A society of students might be formed, and aided by others, for obtaining the best instructors in all these branches of art, which each student singly would find impossible. I earnestly commend this to your united consideration. And, above all, do it at once, or your own individual share in the coming reformation will be lost.

I will only add one piece of advice to young architects. *Do not make Opinion a substitute for Art.*

There is at all times an ever-varying set of opinions afloat as to matters of art, — and those who ride on the wave of the last-received opinion of their party — be it good or bad — are apt to be viewed by themselves and their companions as oracular, quite irrespective of their own attainments or skill. What I would, then, say is this; hold what opinions you like, so long as you make yourselves artists, and you will come right in the end; but hold what opinions you like, if you neglect to make yourselves artists, you will never be good for much.

I will add another suggestion. Never let your appreciation of the demerits of the present age in matters of art lead you into a sneering, supercilious, and contemptuous way of speaking and thinking of what you see; but rather let it impel you onwards all the more vehemently in making *yourselves* exceptions to the censure you pass upon *others*. We continually hear persons speaking in a discontented and hopeless tone of contempt of what others are doing, without exhibiting any very strong signs of exertion to acquire real powers of art *themselves*. I urge you to reverse this habit, and learn to think kindly and favourably of the efforts of *others*, while you keep up a *rigorous censorship over yourselves*. And make all you see in others, whether of success or of failure, act as only so many incentives to the determined pressing forward of *your own* artistic training.

What I have urged respecting the artistic education of the architect himself, applies almost precisely to that of the architectural art-workman. He has an easier task, because his efforts are concentrated upon a single art; while on the other hand, he suffers severely from his very limited facilities of obtaining instruction, and of seeing objects worthy of his study. The aim, however, is precisely the same; and I would say to the art-workman as to the architectural student, make yourself really an artist; jealously cultivate a delicate accuracy of eye; diligently study the finest productions of your art in its best days, and add to all this (or I would rather say, unite with it, and thoroughly mix up with and *knud* into its very substance), a constant, devoted and loving study of the productions of nature, whether animal or vegetable.

I think with art-workmen as with architectural students the greatest hope of obtaining a real artistic training would be in combination for self-improvement — a clubbing together to obtain instruction in drawing, &c. I would especially urge the cultivation of figure and animal drawing. In this our carvers, &c., are the most deficient, and to this they should direct their best attention; not so much with the direct object of becoming figure sculptors, as to facilitate the free introduction of animal life in combination with architectural carving, a power which our best carvers very rarely possess, but which is absolutely necessary to the perfecting of their art.

Now, with the actual student, as distinguished from those who have made a certain degree of proficiency, there can be no doubt that the best training is frequent and careful copying (whether by drawing, modelling, or carving) from models of undoubted merit. Every art is acquired in the first instance by submitting implicitly to routine: no one would believe that the mechanical drilling which a soldier has to go through, would do much to teach him actual fighting, yet it is found practically that success absolutely depends upon it, and so well did the ancient Romans know this, that — as Gibbon, I think, remarks — they called their army by a name not derived from their ultimate duty of *fighting*, but from their preparatory duty of exercising. No one, again, would believe that the dumb show called "position drill" would make a man a good rifle shot; and a thousand parallel cases could be instanced to show how skill in any pursuit is to be attained by submitting, for a time, to what may be accounted as *drudgery*. Art is not an exception to this rule, and I would recommend its younger students (and perhaps others, if they have not already passed through the ordeal) to put themselves through a diligent course of the most careful drawing or modelling from the best examples they can find, before they venture upon a freer line of study. By this they will attain a correct appreciation of truthfulness of line, and of the importance of precision of detail, and they will find that it will greatly facilitate their future and less mechanical studies, and in the end promote, rather than fetter, originality.

It may appear that I have been departing widely from the subject of my paper; the very contrary is the case. It is useless to treat of what a museum of architecture should be without first considering its necessity and the uses it is to serve.

I think what I have said respecting the art education of architects and architectural workmen will make this pretty clear.

Architectural students may, it is true, visit the actual buildings which contain the objects of their study, they *must* do so indeed, and they *do it*; but, even with them, it is impossible to do this so often and so systema-

tically as to form the staple of their studies. They need, in addition to this, facilities for constant practice and self-tuition, they want a place where they may continually refer to the finest examples, where they may pursue their studies and practise their hand and eye continually, and on all occasions when a spare hour is at their command.

And if this is so necessary for the student of architecture,—nay, for the architect himself,—how greatly more pressing is its necessity to the art-workman! Instead of wondering and saying ill-natured things about the deficiencies of our carvers, &c., it seems to me half miraculous that they should be able to learn their arts at all. Those who have aimed at classic art would have never seen its original productions at all, were it not for the specimens collected in museums; and even those who follow the Gothic revival, though its original productions are around us, have usually neither time nor money for visiting any but those buildings immediately within their reach. This is still more emphatically the case with the young apprentice. His time is not at his own disposal, and the only opportunity he has for self-improvement are his evenings.

The formation of the Architectural Museum in 1852 was the first and has been the only step taken to aid him. Till we, the architects who everyday of our lives witnessed and experienced this pressing need, came forward ourselves to supply it, nothing was done to aid the neglected architectural workman, and to this moment we, in the main, stand alone as his helpers.

I do not wish to boast of what we have effected, but it would be unjust to our great cause to abstain from asserting that the good done by the formation of the Architectural Museum is beyond all calculation. From the time it was first opened in Cannon Row, the improvement in architectural carving became most marked and indisputable; and the same influence for good was visible among such architectural students as availed themselves of it. Its influence has been somewhat reduced by the remoteness of its present habitation, but it still continues; and I think I see means of meeting this unavoidable disadvantage. It was our limited funds which led us to take up our quarters at South Kensington, and the same cause has rendered us powerless to resist a series of circumstances which has brought us more directly than at first under the régime of its autocratic government.

If that governing body should take up our work for us, and carry it out with a true appreciation of its importance and its necessity, we need not feel ourselves annoyed at the transference of our powers and our labours to a body so richly endowed with worldly goods.

I warn them, however, with all seriousness, of the responsibility they have incurred. They have done their utmost to render practically powerless a body of men who, at a great sacrifice of time and money, have come forward to initiate a work of the most urgent necessity, which the Government had always refused to do. They have the pecuniary means for carrying on this great work. If they neglect to do it, if they do it inefficiently, and if they refuse the aid and advice of those who have launched the Museum into existence, they are, in their own individual and personal reputation, answerable to the public and to posterity for the consequences. If, on the other hand, they will take it up in all honesty and heartiness, I can only say that we shall rejoice to aid their efforts in every possible way; and that they will, personally as well as collectively, earn the lasting gratitude of all who care for our noble art.

I cannot, however, omit here respectfully, though in the most emphatic and in the strongest manner, to protest against any attempt to dismember our Collection, otherwise than with the full permission and consent of those who have formed it. A collection like this must of necessity require periodical revision. That revision, however, *must* be effected by, or in full concert with, those who made the collection. I have personally taken an active part in doing this, and, so far as I am individually concerned, I will never consent to have it dismembered by those parties who have taken no part in its formation.

I further enter my firm though respectful protest against any attempt to prevent us from increasing our collection as heretofore. We, as architects, have continual opportunities of adding specimens to our collection, and I protest against any attempt to deprive us of the power of doing so. I have no objection in all these matters to mutual and friendly cooperation, but, so far as my individual voice goes, I will never consent to abdicate our powers of adding to our store, so long as we exist as a Committee, and continue possessors of the Collection. It is our best and our dearest privilege, and it will be treason to our cause to relinquish it.

(To be continued.)

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting of this body was held at the rooms, Conduit Street, Regent Street, on Monday evening; WILLIAM TITE, Esq., M.P., F.R.S., the President, in the chair.

Professor DONALDSON introduced to the Chairman as visitors:—Baron de Bode, engineer, Paris; Monsieur Trélat, architect, Professor of Architecture, Arts et Metiers, Paris; and Monsieur Stehlin, architect, Basle.

Several donations were announced, including a number of books presented by Mr. GEORGE R. BURNELL, C.E., to fill up vacancies in the library. Thanks to the donors were returned.

The CHAIRMAN invited the Fellows present, who had not already done so, to sign a memorial to the Government in favour of their providing funds for the restoration of the Chapter House of Westminster Abbey. The Dean of Westminster had acted nobly in this matter, in calling public attention to the subject, for it was impossible for the church funds to restore that magnificent building. The chapter house had been, since the reign of

Charles I., in the possession of the Government for the keeping of records. It was a remarkably curious and extraordinary building, which had been decorated in a most remarkable way.

Architectural Drawings at Windsor Castle.—Mr. ARTHUR ASHPITEL, having been called upon by the chairman, said: A short time before the fatal illness which deprived the architectural and artistic world of one who had devoted the best part of his study and energy to cultivate and foster their pursuits, that great personage had occasion to direct some very important alterations in the Royal Library at Windsor. During his researches there he discovered some old Italian architectural MSS. bearing the name of Muzio Oddi, of Urbino. He was much interested by the bold, original, and in some degree quaint nature of some of the drawings, and the extent of the knowledge and pursuits of the author. There were rough designs for large churches and palaces, mixed with sketches for details of the smallest matters; and with them were plans of battles and sieges, projects for fortifications of vast extent, and with them minute details, comprehending even the method of raising a drawbridge. The writing is in old Italian, and very difficult both to decipher and to translate. As other volumes now from time to time come to light, evidently by various architects, and all inscribed in the same language, and as many long days' reading in the libraries of Italy, while in search of materials for the restoration of the remains of old Rome, had made me, in some degree, familiar both with the character and phrases of the MSS. of the time, I was requested to examine them, and was able to identify and explain the greater part of the subjects. The research was of course suspended and delayed by the melancholy death of His Royal Highness, but ultimately this was the result:—No less than 32 bound volumes, mostly of very large size, were discovered, besides six large portfolios of drawings, which probably were intended at one time to have been bound. The earliest date I could discover written in them was 1563, and the latest 1773, but many of the drawings are probably older. Some of these volumes contain the arms of the Albani family, and as they are surmounted by the cardinal's hat, it is probable they came from the library of some ecclesiastical dignitary of that family. Some have the arms of the celebrated Consul Smith (as he is generally called), a gentleman who occupied a distinguished diplomatic situation in Italy for a long time, and who is favourably known among artists as a collector of very refined taste, and better known among the lovers of old books as the editor of the curious *fac simile* of a very early and celebrated edition of Boccaccio. Some of them contain reports, directed to Pope Clement XI., who was one of the Albani. Whether he bequeathed them to his family, or in what way they got to England, is matter of conjecture. The tradition is that Consul Smith had an unlimited commission from George III. to purchase for the royal library. Suffice it to say they commenced before the period of the completion of the chapel, as we should call it, but, as Italians say, the tribune of St. Peter's, and proceed, giving examples of some of the finest modern edifices in Rome, to the decadence of the art of architecture in Italy, a range of more than 200 years. Among the objects of which we have copious detail drawings are those of the completion of St. Peter's and building the sacristy, the alterations of the basilican churches of the Lateran, St. Sebastian, and St. Maria in Trastevere, which were required by a change of ceremonies at the period of the Papal benedictions of the Pope; a great number of new churches, among which San Ignazio, Spirito Santo, San Pietro in Montorio, works connected with Santa Maria dei Angeli, and many others; among the villas are the Giulia, Medici, Albani, Riari, Madama, Panfil, and the banquet-house of Cardinal Farnese; among the public buildings, the Curia Nuova, the Propaganda, and many of the buildings on the Quirinal; of theatres, the Aliberti, Tordenone, that at Parma so well known; the noble flight of stairs or salita of the Trinita ai Monti, and the fine façade of the fountain of Trevi. Among the objects of antiquity are drawings of the Columbaria about Rome, and of all the temples and basilicas in the state they were in at the time. Valuable as those are which represent objects still in existence, there are many which have a twofold value to the Roman antiquary, because they have since wholly or in part disappeared. Among them are the temple of Minerva Medici, that in the Forum of Nerva, the Sættizonium of Septimius Severus, the villas of Hadrian and of Pliny, and a great number of relics formerly in the Appian Way. There are also rich treasures in beautiful copies of friezes, arabesques, stuccoes, and mosaics, taken from the remains of antiquity, many of which have faded since exposed to the light, and some, perhaps, have perished. But the architects have not confined themselves simply to building operations, they have condescended to design the minute adjuncts to decorations required. We find among those volumes drawings for altars, tents, tombs, funeral decorations, chimney pieces, fountains, and even lamps and thuribles. Nor have they been content with the artistic portion of their profession; we find amongst these volumes evidences of high scientific knowledge; we have drawings of harbours, with the method of repairing breaches of the sea and constructing breakwaters, on a less scale, it is true, but as ably planned as that at Plymouth, and a more wonderful work, if we consider they could not compel the services of that gigantic helot steam in those days. There are also designs for prisons and houses of correction quite on the principle of our system of inspection, plans for complete drainage of towns, and a number of others, which show that architecture and engineering were at that time almost synonymous arts. Not only so, but military engineering exhibits itself largely in these volumes. There are plans of the sieges of Tortosa, Monferrat, Fuentes, Antibes; a number of military plans of various parts of the country; projects for fortifying the city of Lneca, which were carried out and now exist; curious designs for towers of defence, mounting one large gun, like our Martello tower; designs for large granaries; powder manufactories, with draw-

ings of the machinery; designs for drawbridges; in short, specimens of almost all the useful and ornamental arts of the day may be found in those volumes. The names attached to the drawings, which in most cases, and perhaps in all, are autographs, are indeed deserving of deep respect, second only to those of the great men of the age which immediately preceded them, as Da Vinci, Raffaele, and Michael Angelo. We find the names or works of Julio Romano, Domenichino, Bramante, San Gallo, Pirro Ligorio, Bartoli, Borromini, Oddi, the Fontanas, &c. And one precious volume is filled with original sketches, chiefly from Venice, by the famous Canaletti. When we consider the versatility of talent displayed by the Italian architects, who did not disdain small things in art because they were capable of great things, nor the useful because they were masters of the ornamental, it is not to be wondered at they held the high rank in society they did. The Pope, the Emperor, the Grand Duke, all welcomed the architect as not only a lofty, but a useful spirit in the state, and he trod in Courts the equal of the leading minds of the day in other intellectual pursuits—the diplomatist, the jurist, or the great inquirers into the physical or metaphysical worlds. Whether the system urged upon us by some, in the present day, of despising science and learning; and narrowing the mind to one branch alone, or rather to a sub-branch of a branch of architecture, tends to raise the profession in the eyes of the public, or whether it has not already tended to its depreciation in some degree, it is now our purpose to inquire. By gracious permission of the Queen we have before us four volumes out of the collection at Windsor, on which I beg to venture a few remarks. They are not specimens of the most finished and most highly-coloured drawings there, but exhibit rather the architect in his studio, dashing off with a common pen the ideas arising in his mind, and the greater part had probably never been meant to meet the public eye. The most of them, however, are evidently to scale, and the localities and the subjects, and the purpose-like manner in which they are executed, will, I am sure, be worthy our attention. The first to which I shall direct your attention has a melancholy interest attached to it: for it was the first discovered by the late Prince Consort. The name of its author is not one of those familiar to every ear, though in foreign biographies it holds a respected place. It may be convenient, however, to state a few facts as to his character before proceeding to the examination of the contents of the two volumes, which I will endeavour to do as briefly as possible. Muzio Oddi, whose name stands conspicuous on the title-page, was born at Urbino, in 1569. His father was an officer in the troops of Francesco di Medici. At an early period he gave promise of spirit and talent, and was placed under the tuition of the celebrated Barocci, from whom he learned drawing. This painter was also a native of Urbino, and one of the few that opposed the so-called eclectic school of the day, preferring rather that of Correggio, Raffaele, and their predecessors. He soon discovered in the lad a talent for mathematics and the constructive arts, and advised him to give them his particular attention. His biographers say that Oddi made rapid progress in these studies, when, like our late valued and lamented fellow member, the celebrated Cavaliere Canina, he entered the army, and became *Chf d'Artillerie*. He seems to have distinguished himself so much, and to have won the approbation of the Grand Duke to such a degree, as to be admitted member of his Privy Council, when suddenly a storm broke over his head. He was charged by the Grand Duke with having betrayed the secrets of the Privy Council, and that to his wife the Grand Duchess, and he was immediately consigned to the dungeons of Pesaro. The charge seems strange; and there are hints that, after all, Italian jealousy was at the bottom of the accusation. However this may be, it seems clear that the unhappy young man was subjected to a strict and cruel confinement for nine long years. He was deprived of the use of pen, ink, and paper; but his biographers say he got over these defects by making pens out of pieces of reed, and ink from charcoal and the soot of the chimney, and that he fabricated a sort of size from the relics of his food, with which he prepared the commonest sorts of paper, so that they could take the ink. Specimens of these drawings are still preserved at Urbino, and shown as curiosities; and I have very little doubt that some of the rougher sketches now on the table before us were done in the same manner. In these pursuits, and in the study of mathematics, the time passed away, and he was at length liberated, but on condition of his leaving his native place for ever. He proceeded at once to Milan, where he was elected to the Professorial Chair of Mathematics, and probably practised also as an architect; for we have in the volume before us some designs which appear to have been carried out in the Cathedral there. From thence we read that he was invited to Lucca, to fortify that city; it was in the year 1626, when the struggle was going on for the vacant Dukedom of Mantua, and Italy was ravaged alternately by the arms of France and Spain. The drawings of those fortifications are before us; and we are told that they gave such satisfaction to the authorities that he was presented with a medal of honour. From the plans of sieges and other military operations, it is probable he was present at some of the battles which ended with the sack of Mantua. He seems, however, to have resided at Lucca; for his biographers state he was invited from thence by Cardinal Trivulzio to return to Milan. This invitation he declined, preferring to proceed to Loreto, where he seems to have designed the sacristy for the famous church there, and to have executed works at Ancona. Shortly afterwards he seems to have had permission to return to his native town, Urbino, where he died at the age of 70 years. His writings are still extant, and they are purely mathematical. One is a description and the direction for the use of an instrument which he calls the *polymetral compass*, a delineation of which it is supposed is in one of the volumes before us. On the title to the book is neatly written "Original

Drawings from the hand of Muzio Oddi, of Urbino." It commences with a large number of sketches in a sort of ink and in red chalk. Some of these are very neatly finished, others are of the roughest description—in fact nothing but scratches, and as if done by a very imperfect light. They are in mere scraps of paper, and the probability is a good portion of them were done in the solitude of his dungeon, and with the imperfect materials I have described. Among them is a drawing of a curious instrument, composed of two limbs connected together by a graduated, circular arc, which seems to be fixed, and carrying another one graduated in like manner, which seems to be moveable. It is furnished with a plummet, and seems intended for taking angles or levels, and may be the *polymetral compass* alluded to by his biographers. (We shall give the remainder of Mr. Ashpitel's address in our next.)

CHURCH, CHAPEL, SCHOOL, AND OTHER BUILDINGS.

CHURCHES.

LAMBETH.—In the Kennington road, Lambeth, contiguous to Walcot place, a handsome district church is now being erected, and will shortly be completed. It is in the early decorated style, from the design of Mr. H. E. Coe, the architect, and will be dedicated to St. Philip. The chief material is Kentish rag stone, laid in the random style, which, together with the Bath stone dressings and the lofty spire, 140 feet high, with which it will be adorned, will, doubtless, produce a most picturesque effect. The entire details are being carried out by Messrs. Jackson and Shaw, of Earl street, Westminster, the builders. The whole cost of the building is to be not more than £6,000, while it provides 1,005 sittings (519 free). It is intended also to erect a parsonage, and a friend has offered £5,000 on condition that the latter, as well as the church, shall be built and an endowment of £200 a-year provided before Christmas, 1862.

OUNDE.—A petition for a faculty to restore Oundle church has failed: another effort, however, is to be made.

HYTHE.—The new window, the gift of Thomas Quested Finnis, Esq., has been placed in the east end of the chancel of the parish church, Hythe. The window consists of one centre light, 35 ft. by 4 ft. 6 in., and two side lights, 33 ft. by 3 ft. 6 in. each. In the centre are three medallions—the crucifixion, the resurrection, and the ascension—with geometrical work. In each of the side lights also is a medallion—one, the raising of Lazarus; the other, the raising of the daughter of Jairus—with geometrical works. Running the length of the window is the inscription, on glass:—"This window was presented by Alderman Thomas Quested Finnis, of this town, and Lord Mayor of London, to the memory of Ann Lydia, who departed this life on the 7th Nov., 1861." The work has been beautifully finished by Messrs. Chater and Son, of St. Dunstan's, Tower Street, London.

HIGHWORTH.—The parish church, which has been lately restored, was re-opened on the 6th inst. by the Bishop of the diocese. The whole building is very lofty, and, with the large windows, extremely well lighted. A new entrance gate from the road on the west has been erected, and a broad path, paved, formed to the west door in the tower. The ground around the church has been lowered, and new paths formed. Mr. Huggall was the architect, and Mr. Padley, the contractor.

STACKPOLE ELDER.—A memorial window to the late Earl of Cawdor, by Mr. A. O'Connor, has been placed in the church of Stackpole Elder, by the tenant-farmers and other inhabitants of the six parishes comprising his Lordship's estate in that part of Pembrokeshire.

ST. BARTHOLOMEW'S NEW CHURCH, NEAR SOUTHSEA.—In August last St. Bartholomew's Church was commenced, and it is now nearly completed, the portion built being the nave, chancel, and vestry, the cost of which, with the western gallery, is £2,500. The accommodation at present afforded is for 700 persons. There are three entrances to the church, the principal one being at the west-end, having a large porch, the others being on the north and south sides. On the south side of the building, under the chancel-arch, is a handsome octagonal pulpit upon standing columns with foliated caps. The chancel-arch is supported on two handsomely carved corbels; the altar-rails are of carved stone, the gas standards coming up through the piers. Fixed against the east wall of the chancel is an ornamental stone screen of excellent workmanship, designed to contain the Commandments, &c. The east window is a beautiful specimen of stained glass, designed and manufactured by Messrs. Chance, Brothers, of Birmingham. The lower portion of this window, which has been presented and erected in memory of the late John Warden, Esq., M.A., is composed of geometrical figures, exquisitely designed in harmonising colours, the upper portion consisting of a very beautiful representation of the Saviour's ascension. The roof is of open stained timber, varnished, as are also the whole of the sittings, which have been built on the most approved modern principle. The architects of the building are Messrs. Goodwin and Butcher, of London, and the builder, Mr. T. R. White, of Landport. The whole of the work has been carried out under the immediate superintendence of Mr. Goodwin. It is proposed to consecrate the church the latter end of this month, which ceremony will be performed by the Lord Bishop of the diocese.

ARDAMINE, IRELAND.—A new church, dedicated to St. John the Evangelist, has recently been consecrated at Ardamine, Ireland.

ISLIP CHURCH.—A fine window in stained glass has just been placed at the east end of this church, in memory of the late Dr. Buckland and his wife. It is the gift of their children, he having been several years rector of this parish. It consists of three main bays, surmounted by a bold compartment of six points, with other tracery. The design consists of the vine,

distributed over the whole surface of the window, so ingeniously intertwined as to form in its several interlacings the various panels which contain the subjects. The main panels in the chief bay contain the "Annunciation," "Crucifixion," and "Noli me tangere." The chief tracery light has the "Ascension of our Lord," the minor ones the "Pelican in her piety," and the "Holy Lamb," &c.; the other panels have angels, monograms, and other several subjects, mostly referring to the passion of our Lord; all these are enclosed by various and beautiful borderings. At the bottom of all runs the following inscription, "Memorial to William Buckland, D.D., Dean of Westminster, died Aug. 14th, 1856, and Mary, his wife, died Nov. 30th, 1857. By their children." Messrs. Warrington and Sons, of London, are the artists.

GLASGOW CATHEDRAL.—COMPLETION OF THE ROYAL WINDOW.—The long-expected painted glass for the east window is now erected. The splayed sills have been replaced, and the window frame is restored to its original form. The new window contains figures of the Evangelists—Matthew, Mark, Luke, and John—very noble figures, whose inspired and hopeful look is intended to contrast with the stern prophets of the transept window; the contrast between the old and new dispensations is thus typified, so far as it may be possible by the power of art. The upper part of the window is filled with a diaper of singular elegance, both of form and colour; we do not remember either in modern or old glass seeing a finer diaper or a border of greater beauty. The display of heraldry is magnificent—in the first place, to the left of the centre and of the spectator, but to the right in the window, are placed the arms of the Sovereign as Queen of the United Kingdom; to the right of the centre the royal arms of Scotland; close to the arms of Her Majesty are those of the lamented Prince Consort; whilst the arms of the heir to the throne are placed on the other side, surmounted by the badge of Wales, instead of the usual royal crest. The feathers make an admirable pendant to the crest of the Prince Consort. The entire array of royal arms, admirably designed and executed, has a rich and harmonious effect. There is no special inscription of dedication; but the funds were provided by Parliament, and it has been the wish of the Government to erect a window in entire harmony with those of private subscribers, and regulated in its design and execution, as well as in its subject, by the same conditions. The figures of the Evangelists in this fine work of art were designed by Johann Von Schrandolph, historical painter, Professor of the Royal Academy of Munich, Knight of the Order of Civil Merit of the Crown of Bavaria, Member of the Bavarian Order of Maximilian of Art and Science, and of the Order of St. Michael of Prussia. The ornament is from the designs of Maximilian Aimmiller, architect, Knight of the Order of St. Michael of Prussia, of the Order of the Red Eagle of the third class, and of the Order of Pius IX. The Chevalier Aimmiller is also an honorary member of the Royal Academy, Munich, and inspector of the Royal Establishment of Glass Painting.

ST. MARTIN'S CHURCH, LEICESTER.—About two years ago the intersection tower of this fine church was found to be in such a ruinous condition that the vicar and churchwardens resolved to have it taken down. It has now nearly been rebuilt, together with the north and south transepts. The new tower, which is 26 ft. square, is supported on four handsome arches 16 ft. wide by 32 ft. high in the clear (the old arches were about 12 ft. wide by 15 ft. high), which greatly improves the interior effect of the church. It is proposed to surmount the new tower with a lofty broach spire, but at present the committee have only funds sufficient to carry up the tower to the height of 108 ft. The works have been carried out by Messrs. Dove of Islington, from the designs and under the superintendence of Mr. Raphael Brandon, the architect, who directed the former restorations of this important and interesting church.

STAINED GLASS AT ST. PATRICK'S CATHEDRAL.—The *Dublin Builder* says: Messrs. Barff and Co. have been commissioned to fill in with stained glass the great south transept triplet window of this cathedral. The subject selected by Mr. Guinness, the donor, is "The Ascension of our Lord." A full-length figure of the Redeemer will occupy the upper part of the centre light, the Apostles, in groups, filling the lower portions of the three lights; and those prophets who especially prophesied the coming of our Saviour are represented as seated in glory in the upper parts of the two side lights, contemplating the fulfilment of their prophecies.

ST. GREGORY'S CHURCH, SUDBURY.—This church is to be restored and re-seated.

CHAPELS.

STOCKWELL.—On Wednesday week the foundation stone of a new chapel in the Studley Road, Stockwell, was laid with the usual ceremony by J. Corderoy, Esq. The site is most eligible, the purchase of which, together with the cost of the building, will be about £4,000, of which only about £2,500 has already been subscribed. The style of the edifice externally is Ionic, resembling Mr. Spurgeon's Tabernacle. The materials in front, including the pillars, are of stone. The architect is W. Jenkins, Esq., and the details are being carried out by Messrs. Chincock Brothers, of Wandsworth Road. When completed there will be seat accommodation for 1,100 persons.

METHODIST CHAPELS, SCHOOLS, &c.—New schools, costing £1,500, have been opened in connexion with the new chapel in Mornington Road, Southport. The foundation stones of new chapels have been laid at Merthyr Tydvil, Middlesborough, and Market Rasen; and of new schools at Exeter and Whitechurch, Salop; and new day schools have been opened at Crewe. The Middlesborough chapel is to cost £4,400, and to seat 900 persons with ease. It will be the second Wesleyan Chapel in the town. The Exeter

schools will cost £1,209, and accommodate from 350 to 400 children. The Whitechurch schools will cost £1,130. The Crewe schools have cost £1,316.

CHAPEL ASH, WOLVERHAMPTON.—Mr. Bidlake's plans have been accepted for the Wesleyan chapel about to be erected here. The design is for a building, chiefly of stone, in the Geometric style, with a tower and spire 100 feet high. There is a large window in front; and the lower part of the wall is broken by an arcade, one compartment of which contains a window lighting the vestibule. On each side there is a clerestory, supported in the interior by iron columns. Bricks are employed for some of the arches and bands; blue stone for the shafts of the doorway and arcade; and Bath stone for the cornice of the tower, window dressings, &c. The chapel is 81 feet long and 50 feet wide; and there are galleries at the end and on each side. It is to seat 900 people. There are three vestries at the back, with a yard, &c. The total cost of the building will exceed £3,000.

BUILDINGS.

REDCLIFFE.—An infirmary is about to be erected at Redcliffe, Oxfordshire. The mortuary is in course of removal; the foundations of the main buildings are begun. The shell of the building is likely to be completed this year, and then no doubt need be entertained that means for completing the interior will be found. The magnificent gift of a chapel, by Mr. Combe, waits only for the selection of a site.

TODMORDEN.—A new masonic hall has been opened at Todmorden. The building is a very handsome structure, in the Italian style of architecture, and has cost about £2,000.

NEW THEATRE, EDINBURGH.—Mr. Howard is busy in arranging for the building of his new Theatre in Nicholson Street, Edinburgh, on the ground on which the present circus now stands. It is calculated to contain from two to three thousand people.

KILMAINHAM GAOL.—The female side of Kilmainham Gaol is to be remodelled and put on the separate system, according to the designs of Mr. M'Curdy, which have just received the approval of the Lord-Lieutenant. The new wing recently added to this gaol by the same architect is perhaps the largest in Europe, and forms a new feature in prison architecture.

RACQUET COURT, TRINITY COLLEGE.—The long-talked-of racquet court is at length to be erected in the park of Trinity College, which announcement will no doubt be hailed with pleasure by the majority of the students of Alma Mater. It has been a great source of surprise that such an institution should have so long remained without this great essential to the physical development of the rising generation, who may there pursue their studies. Racquet playing must, in a great degree, tend to counteract the injurious effects of the sedentary and confined life to which the hard-working "honourman" must of necessity subject himself. For this reason alone—say nothing of having "within the walls" those means of recreation which may keep many a youth from the allurements of town-life—we consider this a step in the right direction. Mr. M'Curdy is the architect; Mr. J. Nolan, contractor.—*Dublin Builder*.

COLUMBA COLLEGE.—A new dormitory (early English) is to be erected at Columba College. Mr. M'Curdy, architect; Mr. Gahan, contractor.

GIFT OF A TOWN HALL TO DALBEATIE.—On the 13th inst., a new town-hall and reading room, erected by Wellwood Herries Maxwell, Esq., of Munches, was formally opened.

NEW PUBLIC HALL, DORKING.—A gentleman of this town has projected a new hall, and his agent has exhibited his plans to the public. It is proposed that the large hall shall be capable of holding about a thousand persons.

By the kind permission of the Dean of Westminster, and with the concurrence of Mr. G. Scott, arrangements have been made for a visit of the members of the Architectural Association to Westminster Abbey, on Saturday, the 28th instant. A prize is offered for the best written account of this visit.

GENERAL ITEMS.

THE HOLY SEPULCHRE, JERUSALEM.—The *Paris Patrie* says that both France and Russia reject the proposition of the Porte to participate in defraying the expenses of reconstructing the cupola of the church of the Holy Sepulchre at Jerusalem.

THE THAMES EMBANKMENT.—Monday, the Hon. Mr. Cowper in the chair, the case of the Duke of Norfolk, in connection with the Strand estate, comprehending Surrey, Norfolk, Howard, Arundel, and other streets, of which the Duke, who was represented by Mr. Hope Scott, Q.C., his guardian, is the owner, came under the consideration of the Railway Committee. The Strand estate has a frontage to the river on its south side of 540 ft. in length, and the Duke claims right of foreshore all along it under charter from Charles I. It is proposed to run a sewer, together with the embankment, and to make communications out of them by means of a side road, leaving an angular space 600 ft. long and 60 ft. wide between the embankment, the roadway, and the side road, the width of the latter to be 40 ft., and to communicate with the streets forming the Strand estate by continuations, the result of which as alleged would be to cut off entirely the water frontage of the estate, and to destroy, by the through traffic, the existing privacy of those streets. Under these circumstances, the committee were asked to give protective clauses to the effect that the land reclaimed should not be built on, but be vested in the owner of the estate, together with control over the traffic. The committee expressed a general approval of these requirements, and ordered clauses in accordance with them to be brought up,

as well as in the case of the Marquis of Salisbury, who sought similar protective provisions in connection with his property in Salisbury and Cecil Streets. The City of London Gas Company sought the insertion of clauses giving them the exclusive use of the foreshore between the embankment and their works at Whitefriars for their lighters, storage, and works. Mr. Gray, the chairman of the company, and Mr. Hawkesley, C.E., were examined in proof of the expediency of this, showing that the company's river frontage extended 330 ft. along the river, and that all the available space alongside was required for the manufacture of their gas for supplying the city, which last year amounted to 481,000,000 cubic feet, with 51,758 tons of coal carbonised. Mr. Burke having pointed out the provisions intended to be introduced into the Bill for furnishing the company with adequate facilities for their trade and manufacture, and showed that the embankment would be carried in front of their premises with open arches of 70 ft. span, the committee negatived the application, the parties reserving their opposition for committee of the House of Lords. On the application of Mr. Hepe Scott, on behalf of the Duke of Buccleuch and the Crown lessees, it was agreed that the correspondence between the Treasury and the Commissioners of Works should be produced and entered on the minutes, and the committee adjourned.

PARIS UNIVERSAL EXHIBITION.—It is announced that a permanent universal exhibition will be opened in Paris in the summer of 1863, under the patronage of the emperor. The building is to be on a grander scale than the London Exhibition, the dimensions being 1000 ft. long, with a central dome 345 ft. in height. One of the grand features is that foreign goods will be admitted for exhibition free of duty, with liberty to re-export them, or they may be sold on the spot, paying the duties levied under the new tariff. The great inducement held out to English manufacturers is that they will be enabled to exhibit their goods, and thereby check the large sale of spurious articles now going on in Paris. The capital of £600,000 has already been subscribed in France and Belgium. The building is in course of construction.

BRICK MACHINE.—This invention, patented by John J. Alvord, of Tecumseh, Mich., consists in a novel and improved clay-tempering device, rotary mould-wheel and screw-feeder, so constructed and arranged that the whole process of moulding and pressing bricks is performed by mechanism having a rotary motion, the working parts being so arranged as to admit of a quick movement without the liability of getting out of order or becoming deranged in any way.

THE PROJECTED CRYSTAL PALACE AT DUBLIN.—A company has been formed for the erection of a permanent Crystal Palace, the directors including forty of the most influential noblemen and gentlemen of the city, with the Duke of Leinster as chairman, and Mr. B. Lee Guinness as vice-chairman. The ground selected, about fifteen acres, is to be turned into a winter garden, and in its centre the palace is to be put up, containing a concert hall, along with galleries for the exhibition of work of art and art-manufacture.

MEMORIAL TO A LADY.—A memorial has recently been erected in St. Barnabas's Church, Erdington, to the late Miss E. Harrison, of that place. It consists of the figure of an angel, five feet eight inches high, executed in Caen stone, bearing a brass shield, upon which is the following inscription:—"The poor of Erdington erected this tablet as a memorial of their gratitude to Elizabeth Harrison, who died March 20, 1860." The carver of the figure is Mr. S. P. Wood, of Lichfield; and the brass the work of Mr. Thomas Brawn, architectural metal worker, Birmingham.

A LADY SCULPTOR.—In the Great Exhibition (North Court, Central Division) is the statue of a large dog, sculptured by the lady of Henry Heathcote, Esq. (brother of Lord Aveland, of North Luffenham, Rutland), which has already attracted groups of admirers. The animal is represented as lying down, with its fore legs extended and its head erect, the pose altogether being very natural. It is the statue of a favourite living dog in Mrs. Heathcote's possession, and is a very spirited and highly successful production from the fair sculptor's atelier, which, we believe, was on the premises of Mr. Blashfield, of Stamford, amongst whose beautiful terra cotta goods the statue in question has found a locale in the exhibition.

THE DEMOLITION OF THE HOUSES OF THE LONDON POOR.—The *South London Journal* says:—"The construction of the Metropolitan Meat and Poultry Market will destroy 86 small houses, and displace 939 persons, and we are told that the Railway Company will furnish cheap railway travelling, morning and night, to Farringdon Street, for 1,000 working men. Now, this is rather better than saying there is room for them in the neighbourhood, but who will build dwellings for these thousand men in the vicinity of a station, where land is sure to be almost as valuable as in the metropolis? Moreover, the cheapest possible cost at which a working man can be conveyed to and from the place of his labour will make a serious inroad upon his income, and the necessity of taking his mid-day meal apart from his family will add another formidable item to his expenses. It appears to us that what is required in all cases is, the construction of houses adapted for the labouring classes, contiguous to the territory which these public improvements invade, and that this should be done, if other means fail, by legal enactment. In the case of new streets, the needful accommodation for the working people might be afforded without much difficulty, and we see no insurmountable obstacle to it in the making of a metropolitan line of railway. We learn with much satisfaction that the attention of the Metropolitan Board of Works has been called to the subject, in connection with the new street in Southwark. There seems to be no reason why that street, throughout its entire extent, should be bounded by only shops and first-class houses. Why should not cheap, yet neat and commodious dwellings, for artisans and operatives find a place there as well

as more costly abodes? Even if it should not be deemed desirable to erect such dwellings immediately in front, there are many small sites abutting thereon which might be made available for them, so that the worst evils of displacement may be avoided. We have no reason to doubt that the matter will be taken into the serious consideration of the Board, and we shall truly rejoice if in the end they see their way clear to provide for the lodgment of those who have been dispossessed of their homes by a great measure of public improvement, which the new street unquestionably is."

MONUMENT TO THE GROOM OF QUEEN VICTORIA.—Messrs. Osmond and Son, sculptors, of Salisbury, have just erected in Whippingham churchyard, Isle of Wight, a monument, consisting of a cross on three steps and circle, with the following inscription:—"To the memory of George Frederick Jones, born 1820, died 1862, groom to Queen Victoria, and the faithful attendant during 13 years of the Royal children, by whom this stone is erected, 1862."

DEPARTMENT OF SCIENCE AND ART.—The increase of students attending the schools of the Department of Science and Art during the last few years is worthy of record. In 1859 the numbers were 85,969 persons; in 1860, 88,461; in 1861, 91,741. The number (included in the above) under Science instruction in 1861 was 5,390, to whom 322 prizes were awarded; in 1860 the numbers were 3,158. The travelling museum has been visited, since the circulating system commenced, by 608,707 persons, and the localities have realised 15,690*l.* in fees, which they have retained in aid of local expenses. This excellent arrangement has enabled the inhabitants of thirty-four cities and towns in the three kingdoms to examine the splendid results of Art thus brought to their doors.

CARRICKFERGUS PIER, IRELAND.—The Municipal Commissioners of the port of Carrickfergus have applied for a provisional order for works for improving the accommodation for shipping, by the construction of a pier or quay, giving a depth of five to seven feet at low water; and also for forming a breakwater on the west side of the harbour. The Commissioners have also sought for power to levy rates. The cost of the new works was estimated at £6,000.

SHAKESPEARE'S HOUSE, STRATFORD-ON-AVON.—The works for restoring Shakespeare's house at Stratford-on-Avon, and converting the ground adjoining into a garden, which is intended to be open to the public, have been actively commenced, and it is expected that they will be completed in about a year.

THE UNDERGROUND RAILWAY.—In excavating the cutting opposite Ray Street, which is intended to connect the Clerkenwell tunnel with the station in Victoria Street, the workmen have uncovered the large vault which contains the remains that were removed some years back from the pauper burial-ground of Clerkenwell. This vault is of great depth, covered at the top with massive stone slabs, and ornamented with a large stone cross. The workmen have already removed the earth nearly to the level of the line, previous to pulling down the vault and removing the remains to some extramural place of sepulchre. A great number of labourers and artisans are employed on the site of the terminus in Victoria Street, and mounds of clay are being burnt ready for use in the foundations. The stations at King's Cross, Gower Street, and the rest of the works of the line, are in a state of great forwardness.

FALLING-IN OF THE FLEET SEWER.—Great excitement has prevailed in Ray Street and Saffron Hill, Clerkenwell, in consequence of a falling-in of a portion of the Fleet sewer at those spots. The first alarm was given on Sunday afternoon between the hours of two and three, when about twenty feet of the roadway fell in, the old sewer having given way. The cause of its breaking away is attributed to the late heavy rains; but it may be mentioned that some years back, near the same spot, another portion of the same sewer fell in. Mr. Superintendent Gernon and Inspector Brannan, of the G division, with a strong body of police, were at once in attendance, and the roadway was barricaded. On Monday morning it was found that between ten and twelve feet more of the sewer had given way, and the whole of the houses were flooded. The whole of the flour belonging to Mr. James Warkley, baker, of 29 Ray Street, is damaged. Mr. E. Richardson, the landlord of the Coach and Horses public-house, and other persons, have sustained great damage. The surveyor of the parish has been communicated with, and efforts have been made to prevent any further damage.

MOFFAT.—BUILDING.—Hopetoun Place, in Academy Road, is now finished, and adds greatly to the amenity of that part of the town. The houses are on the metropolitan scale for beauty, accommodation, and attention to all sanitary requirements. Havelock Crescent is opening up a communication between the Old and the New Well Roads; and another crescent, taking a similar curve, has lately had two houses begun; other feus are taken in the vicinity. Beech Grove is extending itself. The British Linen Company's Branch Bank is nearly finished, and is a handsome substantial building. The United Presbyterian Church is to be contracted for next week, we hear, and as we have seen the architect's designs, we know it will be a very elegant, commodious English-Gothic structure, and will greatly ornament the town.—*Correspondent of Scotsman.*

CHIPS.

THE aqueduct now in course of construction at Paris will be 4,034 metres in length.

In the House of Commons, on Thursday week, Sir G. Grey stated that a bill would be ready in a few days to provide for the construction of a second shaft in coal mines.

The *Mining and Scientific Press* of San Francisco says that about twelve

miles from Auckland a coal oil-bed has been discovered, from which large supplies can be derived for burning purposes.

A new bridge is to be built over the Willybrook, King's Cliffe.

A monument is about to be erected in the cemetery at Louth, and a memorial tablet in Walkergate Chapel, in the same town, by the members and friends of that place of worship, in memory of the late Rev. J. Kiddall.

At the Sheriff's Court of Surrey, the Rev. J. G. Wenham, a Roman Catholic priest, sought to recover the sum of £627 10s. from the Metropolitan Board of Works, as compensation for loss sustained by him in consequence of the Board requiring a building in Price's Street, Gravel Lane, Southwark, used as a Roman Catholic charity school, of which the plaintiff was manager, &c., for the purposes of the new street. The jury found for the plaintiff—damages, £350, which will, of course, carry costs against the Board.

One hundred thousand sacks of earth have been thrown into the cofferdam at Lynn, up to Wednesday afternoon. The leakage through the banks consequent upon the recent rise of water upon the land inundated, continues to increase daily.

The mason-builders have, it appears, generally accepted the terms upon which the masons consented to close their strike last week, and the men who remained out have been pretty well absorbed in the various yards and shops.

A new cemetery has just been opened at Weston, near Bath. The chapel on the ground, for the use of the members of the Church of England, is of the early pointed style, 25 ft. long by 15 ft. wide, has a small turret at the angles, surmounted by a spire. The Nonconformist chapel is of octagonal form, 20 ft. in diameter. Both edifices are lined with ashlar, and covered with high-pitched roofs. The work has been executed, under the superintendence of Messrs. Manners and Gill, architects, by the following tradesmen:—Mr. Greenman, carpenter; Mr. Birth, mason; Mr. Derrick, smith; and Mr. John Bussells, glazing and slating.

Messrs. Ormerod and Co., of St. George's Iron Works, Hulme are making a railway and road-bridge for spanning the Jumna, near Delhi. The bridge will consist of twelve arches, of 205 feet span each, and will be half a mile long. It is for the East India Railway, and is the design of Mr. A. M. Rendel, C.E.

A successful experiment in preserving wood for vessels has been made at Cherbourg. It consisted of subjecting the wood to a slight carbonisation with common inflammable coal-gas.

The sixth annual conversation of the St. Martin's School of Art will take place at eight o'clock, on Friday, the 27th instant.

A new street from Southwark to the Westminster Bridge Road will be opened in a fortnight.

It is said that the Exhibition about to be built at Paris, by Sir Joseph Paxton, is to be of such dimensions that the Crystal Palace at Sydenham will sink into insignificance if placed beside it.

The Lincoln Diocesan Architectural Society will hold its usual autumn meeting this year at Leicester. The gathering will commence on Wednesday, August 6. The Archaeological Association of Great Britain, the Leicester-shire Architectural and Archaeological Society, and the Northamptonshire Architectural Society will also unite their forces on the occasion. An interesting feature of the proceedings will be an excursion to Bosworth Field, one of the most famous scenes in English history.

The *Times* of Wednesday says, "We are informed that a very comprehensive plan is now before the Admiralty, showing what can and what cannot be done at Portsmouth in the way of enlarging the present dockyard, what are the existing difficulties, and how they may be best overcome. In considering this question, care must be taken not to overlook the value of the present establishment, and the importance of Spithead anchorage, whether as regards position, space, holding-ground, or security."

A new Corn Exchange is about to be built at Melrose, Scotland.

The first stone of the Leeds Grammar School Chapel will be laid by the Bishop of Ripon, on the 2nd of July.

A memorial fountain, to the late Dr. Fothergill, on account of his attachment to the temperance cause, and strenuous advocacy of all philanthropic objects, was inaugurated on Whit Tuesday, at Darlington. The design of the fountain is perhaps the most elegant to be found in the North of England, and the erection has cost a considerable amount of money.

A bill has been introduced into Parliament by Mr. McMahon, M.P., "to facilitate the obtaining of sites for places of worship."

The excavations at Rome, on the Palatine Mount, are attracting much attention. The vast accumulation of rubbish which covered the pavement of the building, supposed (but erroneously) to have been the Temple of Apollo, has been removed, and access is now free to the range of vaulted rooms below. Several objects of great artistic interest have been found in these rooms; among others, a pavement composed of rich marbles, columns with elaborately-carved capitals, and remarkable thyrsi.

Votes of £500 for the Royal Irish Academy, and £2,750 for the National Gallery of Ireland, have been agreed to by the Commons.

A telegram from Bordeaux of the 14th announces that the Hôtel de Ville of that city has been burnt down. The loss is immense. The archives have been destroyed. The museum is preserved. In Toulouse, also, the other day, an alarming fire broke out.

At St. Petersburg, large warehouses and shops, covering several acres, have been destroyed by a terrific fire, supposed to have been the work of incendiaries. The Apraxine and Stehbkukine markets and the Minister of the Interior's mansion were destroyed.

The contract for erecting a parsonage house for the vicar of the parish of Newport, on the left side of Hunny Hill, has been taken by Mr. Cole Jolliffe, builder, in Carisbrooke Road.

Correspondence.

GAS APPARATUS, INTERNATIONAL EXHIBITION.

To the Editor of the "BUILDING NEWS."

London, June 18.

SIR,—The mode of sealing the end of a coal gas retort by inserting it into a cistern of water, and which was described as objectionable in the "Building News," June 30th, when referring to "Wigram's patent vertical gas retort," can be easily obviated. Retaining the stand which supports the present water cistern, and replacing the latter with a cap of lime luting, this cap could be forced up over the end of the retort by a wedge or a screw having a bearing on the stand.

GEORGE WALCOTT, C.E.

TENDERS.

NEW AISLE, CHURCH OF THE HOLY FAMILY, SAFFRON HILL.—For a new aisle, Church of the Holy Family, Saffron Hill. Messrs. John Young and Son, architects. Quantities supplied by Mr. Shoppee.

Axford	.....	Aisle	£800 0 0	Sacristy	£150 0 0
Conder	.....		762 0 0		143 0 0
Lawrence and Sons	.....		720 0 0		140 0 0
Malcott	.....		649 0 0		133 10 0
Hart	.....		646 0 0		132 0 0
Chessum	.....		630 0 0		150 0 0
Hardiman and Sandon	.....		593 0 0		168 0 0
Kelly	.....		585 0 0		112 0 0

ALTERATIONS.—For alterations, No. 21 Old Fish Street, for Mr. Rich. Messrs. John Young and Son, architects.

Conder	.....	£633 0 0	Hart	.....	£470 0 0
Little	.....	556 0 0	Chessum	.....	435 0 0
Hardiman and Sandon	.....	556 0 0			

NEW BUILDING, ALINGATE.—For a new building, Hutchison Street, Aldgate, for Mr. Lazarus. Messrs. John Young and Son, architects.

Larke	.....	£727 0 0	Henshaw	.....	£595 0 0
Hart	.....	666 0 0	Chessum	.....	580 0 0
Connor	.....	641 0 0			

NEW WARDS, SHERBORNE WORKHOUSE.—For the erection of new vagrant wards, and altering porter's apartments. Messrs. Haggatt and Pocklington, architects.

Hall and Hellyar	.....	£459 0 0	Croad	.....	£370 0 0
Guppy	.....	397 0 0	Penny	.....	364 0 0
Down	.....	373 10 0			

HOUSE AND STABLES, REDHILL.—For house and stables, at Redhill, Surrey, for Capt. E. W. Roberts. Mr. G. Elkington, architect. Quantities supplied by Mr. B. A. C. Herring.

Hack and Son	.....	£5,158 0 0	Gammou	.....	£4,142 0 0
Myers and Sons	.....	4,994 0 0	Browne and Robinson	.....	4,086 0 0
Carruthers	.....	4,500 0 0	Messrs. Coleman	.....	4,064 0 0
Thompson	.....	4,285 0 0	Dale	.....	3,482 0 0

ROADS AND SEWERS NEAR HERFORD.—For roads and sewers, to be constructed on the Eign Gate estate of the Hereford Freehold Land and Building Society. Mr. R. Webster, surveyor. Quantities not supplied.

Morgan	.....	Roads	£415 0 0	Sewers	£300 0 0
Lee	.....		367 0 0		266 9 0
Coker	.....		335 3 4		223 0 0
Trimmer (accepted)	.....		298 0 0		207 0 0

BATH MARKETS.—For reconstruction of Bath Markets. Messrs. Hickes and Isaac, architects. Quantities supplied. Accepted tender.

Stap	£4,978 0 0			
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DRAINAGE, &c., BRIGHTON.—For main drainage and outfall works, for the Brunswick Square and Terrace Commissioners, Hove, Brighton. Mr. R. G. Suter, architect. Quantities supplied by Messrs. Batstone and Hunt.

Sawyer	.....	£5,970 0 0	Credit for old materials	£70 0 0
Moxon	.....	5,400 0 0		49 0 0
Williams	.....	5,104 0 0		56 0 0
Dethick	.....	4,960 0 0		56 0 0
Hill, Keddel, and Co.	.....	4,110 0 0		60 0 0
Crockett	.....	4,028 0 0		28 0 0
Reynolds	.....	4,000 0 0		30 0 0
Bugbird	.....	3,987 0 0		56 0 0
Fabian	.....	3,929 0 0		77 0 0
Cheesman and Co. (accepted)	.....	3,466 0 0		77 0 0

HARE TAVERN, BRICK LANE.—For additions and alterations to the Hare Tavern, Brick Lane. Mr. Reddall, architect.

Scott	£524 0 0	Heath	£499 0 0
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HOMES, PUTNEY.—For the erection of a pair of houses, in the Upper Richmond Road, Putney, for Miss E. M. Simson. Mr. S. Wood, architect. Quantities not supplied.

Avis and Sons	.....	£924 0 0	Aries (accepted)	.....	£814 10 0
Adamson and Sons	.....	885 0 0			

ALTERATIONS SOUTH LONDON MUSIC HALL.—For alterations to South London Music Hall. Mr. W. Paice, architect.

Fish	.....	£829 0 0	Booth	.....	£638 0 0
Sharpton and Cole	.....	787 0 0	Bottom and Co.	.....	619 0 0
Hart	.....	770 0 0	Forster	.....	603 0 0
Colls and Co.	.....	695 0 0			

HOUSE, WIMLETON.—For house for Mr. F. Oliver, at Wimbledon. Mr. E. Nash, architect.

Nicholson and Sons	.....	£1,985 0 0	King, Burton, and Hepwell	.....	£1,930 0 0
Walker	.....	1,970 0 0	Myers	.....	1,872 0 0
Colls and Co.	.....	1,937 0 0			

CHURCH ADDITIONS, PEMROKE DOCK.—For additions to Roman Catholic Church, Pembroke Dock. Mr. J. Cooper, architect.

G. Thomas	.....	£463 0 0	Fitzgerald	.....	£269 0 0
Scarlock	.....	365 0 0	Warlow	.....	235 0 0
Taylor	.....	351 0 0	Bateman	.....	216 0 0
T. Thomas	.....	330 10 0			

MECHANICS' INSTITUTE, PEMROKE DOCK.—For Mechanics' Institute, Pembroke Dock. Mr. K. W. Ladd, architect.

Lewis and Lloyd	.....	£755 11 0	Bateman	.....	£640 0 0
Yerward	.....	721 0 0	Jones and Wilkins (accepted)	.....	598 10 0
Jones and Johns	.....	647 0 0	Warlow	.....	543 0 0
Taylor	.....	645 0 0			

NEW BAPTIST CHAPEL, BRADFORD.—New Baptist Chapel, Manningham Lane, Bradford-Yorkshire. Tenders for the whole of the works.

James Keighley	.....	£5,195 0 0	Booth Illingworth	.....	£4,826 10 0
Gibson and Maude	.....	5,100 8 0	Archibald Neill	.....	4,729 0 0
James Neill	.....	5,077 0 0			

Accepted Tenders. Excavator and Mason—			Plasterer—		
Booth Illingworth	.....	£2,339 10 0	T. Hargreaves	.....	145 0 0
Carpenter and Joiner—			Ironfounder—		
Booth Illingworth	.....	1,354 0 0	James Keighley	.....	£190 0 0
Boundaries—			Plumber and Glazier—		
Booth Illingworth	.....	275 0 0	James Keighley	.....	170 0 0
Slater—			Painter—		
Jno. Tattersall	.....	178 10 3	James Keighley	.....	95 0 0

Total £24,747 6 3

COLLEGE.—For the erection of the Methodist New Connection College, Sheffield. Mr. William Hill, architect, Leeds. Quantities supplied.
Thomas Meeock, Sheffield£3,600 0 0

DETACHED VILLA, UPPER NORWOOD, SURREY.—For taking down detached cottage and erecting on site detached villa, for E. C. Jones, Esq. Mr. William Gosling, architect. The whole of the works to be measured and valued at Skyring's; builders' prices. Mr. Robert Smith, builder, Upper Marcey Road, Plumstead.
VILLA.—For villa, Wilson Street, Derby. Messrs. Giles and Brookhouse, architects.
Thompson£977 0 0 Briggs£894 0 0
Bridgatt878 0 0 Bingham (accepted)825 0 0

HOUSE, GREAT MALVERN.—For erecting a house at Great Malvern, for H. B. Beresford, Esq. Messrs. Elmslie, Francy, and Haddon, architects.
Mr. Wilson Worcester (accepted)£1,364 0 0

HOUSES, GREAT MALVERN.—For erecting a house in the Graham Road, Great Malvern, for Miss Harris. Messrs. Elmslie, Francy and Haddon, architects.
McCann and Elral (accepted)£2,300 0 0

STATION, GREAT MALVERN.—For covering to platform of the Great Malvern Station, for the West Midland Railway Company. Messrs. Elmslie, Francy, and Haddon, architects.
McKenzie, Clunes and Holland,£1,050 12 0
Worcester (accepted)1,109 10 0 J. Connell, Cheltenham1,156 0 0
Barwell and Co., Northampton1,112 10 0 Austin and Brown, Kidderminster

HOUSES, LOWER NORWOOD.—For the erection of two houses, and forming and making new roads, &c., at Lower Norwood, Surrey, for Barnett Meyers, Esq. Tillott and Chamberlain, architects. For two houses, quantities supplied.
Piper and Wheeler£1,040 0 0 Cannon£967 0 0
Fish1,035 0 0 Wills893 0 0
G. and R. Buck1,009 0 0 Mark Deacon880 0 0
Ashby and Sons988 0 0

For forming and making new roads, &c.
Colson£320 0 0 Skitterall£265 0 0
Wills279 0 0 Rogers255 0 0

WHITECHURCH.—For additions to Swanstone, Whitechurch, Oxon. Poulton and Woodman, architects, Reading.
Matthews£3,558 0 0 Sheppard£3,420 0 0
Woodroffe3,494 0 0 Wheeler (accepted)3,398 0 0

COMPETITIONS AND CONTRACTS OPEN.

CHAPEL.—For the building of a new Wesleyan chapel, situate in the Humberstone Road, Leicester. Applications to be made to F. W. Ordish, Esq., Queniborough.

WORKHOUSE.—For the erection of two new wings to the Holbeach Union Workhouse. Tenders to be sent to E. G. Ayliff, Esq., Clerk to the Guardians, by Monday, the 23rd day of June.

RESTORATION OF CHURCH.—For the restoration of King's Cliff Church. Plans and specifications may be seen at the office of Mr. Edward Browning, architect, Stamford. Sealed tenders to be sent to the churchwardens on the 10th July.

SUPPLY OF GRANITE.—For the supply of about 500 tons of Guernsey granite lumps for breaking. To be delivered in the stone-yard of the workhouse, Poplar, free of all charges. The contractor will be required to enter into a written agreement for the due performance thereof. Tenders to be sent to the Guardians of the Poplar Union, by Tuesday, the 24th day of June.

GRANITE PAVEMENT, NORWICH.—For squaring and relaying granite pavement on the Gentleman's Walk, Norwich. A specification may be seen at the Surveyor's Office, 24 Castle Meadow, where every information may be obtained. Tenders to be sent to Mr. H. B. Miller, Clerk to the Board of Health, on or before the 30th of June.

CHURCH RESTORATION.—For restoring the parish church of Eling, Hampshire. Drawings have been prepared by Benjamin Ferrey, Esq., 1 Trinity Place, Charing Cross, London, to whom, in the first instance, all applications, with references, must be made. The architect does not bind himself to reply to all applicants; but the quantities have been prepared, and will be forwarded to those whose references are satisfactory, and they will be informed when the drawings can be seen at the church. Tenders to be sent to the Vicar of Eling, on the 30th of June.

IRONWORK.—The Garston and Liverpool Railway Committee are prepared to receive tenders for the supply and erection of columns, wrought-iron beams, iron roofing, and other ironwork, at their goods' station at Liverpool. Plans, sections, drawings, and forms of contract may be seen on or after the 13th day of June, at the office of W. M. Brydson, Esq., C.E., 8 Whitehall Place, Westminster, London, from whom specifications (price 10s. 6d. each), and any other information may be obtained. Sealed tenders, marked "Tenders for Ironwork," must be in the hands of Mr. Edward Ross, Secretary to the Committee, at the offices of the Committee, London Road Station, Manchester, not later than noon on Tuesday, the 8th of July next.

STATION BUILDINGS.—The Garston and Liverpool Railway Committee are prepared to receive tenders for the construction of their goods' station and buildings at Liverpool. Plans, sections, drawings, and forms of contract may be seen on or after the 13th day of June, at the office of W. M. Brydson, Esq., C.E., 8 Whitehall Place, Westminster, London, from whom specifications (price 10s. 6d. each) and any other information may be obtained. Sealed tenders, marked "Tenders for Works," must be in the hands of Mr. Edward Ross, Secretary to the Committee, at the offices of the Committee, London Road Station, Manchester, not later than noon on Tuesday, the 8th of July next.

CAST-IRON PIPES.—The Water Committee of the Council of the Borough of Liverpool, are prepared to receive tenders for the supply of 200 tons of cast-iron pipes, three inches in diameter, with bent and turned joints, and coated with "Smith's Patent Coating." Copies of specification, giving full particulars as to the terms and conditions of the contract, may be had on application at the Water Office, 58 Hotham Street, Liverpool. Sealed tenders, endorsed, "Tenders for the Supply of Cast-iron Pipes," and addressed to the Chairman of the Water Committee of the Corporation of Liverpool, to be forwarded to the Waterworks Office, Hotham Street, on or before Thursday, the 26th day of June.

WORKHOUSE.—The Guardians of the Poor of the Birkenhead Union, in the county of Chester, having further considered and re-arranged the plans and specifications for the erection and completion of the new Union Workhouse, to be built at Higher Tranmere, in the said county, are now in a position to receive tenders for the same. Separate and distinct tenders will be required for the several portions of the building, as follows, namely: 1st. For the erection of the north wing of the main building, including the dining-hall, centre building, or master's apartments, board-room, &c., with out-offices in the yard, tank, &c., but not including the completion of the cellage under this part of the building. 2nd. For the erection of the south wing of the main building. 3rd. For the erection and completion of the receiving and vagrant wards. 4th. For the completion of the cellage under the main building. It is the intention of the guardians to erect only the first portion or north wing of the main building, as specified above, before the month of April next. The second, third, and fourth portions of the building, to be constructed and completed as soon afterwards as the guardians may determine. The drawings and specifications may be seen, and further information obtained, at the office of Mr. Thomas Layland, architect, 20 Castle Street, Liverpool. Sealed tenders to be delivered or sent to him at the office of the Clerk to the Guardians, 60 Lord Street, Birkenhead, on or before Saturday, the 5th day of July next. Security required.

NEW TOLL-HOUSE.—To be let, the building of a new toll-house, on Gilesgate Moor, Durham. Plans and specifications may be seen on application to the collector, at the present house; and tenders will be received up to the 27th instant, by Edward N. Grace, Surveyor, Broomfield, Newcastle-on-Tyne.

MALT STORES, STABLING, &c.—For the erection of certain malt and other stores, stabling, &c., for Messrs. Pike, Spicer, and Co. Plans and specifications can be seen at the office of Mr. Henry P. Foster, architect, 128 High Street, Portsmouth, and obtain all other information. Tenders to be delivered to him not later than the 26th of June.

WHITWASHING, COLOURING, &c.—For the whitewashing, colouring, and pointing the Workhouse of Stoke-upon-Trent. Tenders, specifying the work proposed to be done, to be sent to the Clerk of the Guardians, Stoke-upon-Trent, on or before ten o'clock in the morning of the 25th inst. The specification of the work required may be seen on application to the Master of the Workhouse.

POLICE STATIONS.—For the erection and completion of a police station at the Felling, near Gateshead, and of another police station in the village of Brandon, near to the city of Durham, severally including a dwelling-house, cells and out-buildings. The plans, sections, specifications, and conditions may be inspected and perused at the office of William Crozier, Esq., C.E., the county architect, in the County Courts, Durham, on and after Tuesday, the 10th June inst.; to whom tenders (sealed and endorsed "Tender for Felling Police Station," or "Tender for Brandon Police Station," as the case may be) are desired to be delivered or sent, on or before Friday the 20th inst.

REPAIRING BRIDGES.—For the maintaining and keeping in repair, during the term of four years, commencing from the 13th May last, the roadways of the following bridges in the county of Durham—viz., Stone Bridge, Langley Bridge, Branepeth Bridge, Crook Bridge, Eel's Beck Bridge, Bradley Bridge, Nickyack Bridge, Gildon's Bridge, and Spennymoor Bridge. Further information may be had on application to William Crozier, Esq., C.E., Bridge Surveyor (at his office in the County Courts, Durham), to whom tenders (sealed and endorsed "Bridge Tender,") are requested to be sent, or delivered, on or before Friday, the 20th June inst.

ENLARGEMENT AND RESTORATION OF CHURCH.—For the enlargement and restoration of the parish church of Chew Stoke, Somerset, seven miles from Bristol. The plans and specifications can be seen upon application to the Rev. W. P. Waite, at the Rectory Hall, on and after Monday, June 9th. Estimates to be forwarded on or before Monday the 23rd of June, to John Norton, architect, London, 24 Old Bond Street, W.

BAPTIST CHAPEL.—For the erection of a new Baptist chapel, schools, &c., on the site of two houses, Stowhill, Newport, Mon. Drawings and specifications may be seen, and copies of the quantities obtained, on applying to the architects, Messrs. W. G. Habershon and Pite, 58 Bloomsbury Square, London; Park Square, Newport; and Belvedere, Tredegarville, Cardiff.

EXETER CITY GAOL.—The town council of Exeter are desirous to be informed if the present city gaol and house of correction can be made available so as to satisfy the requirements of the law, as to the construction of gaols and houses of correction; and they invite architects to ascertain if it is practicable that the present city gaol and house of correction can be so altered. They offer a premium of £30 for the plan of alterations which shall be considered the best, and if such plan be carried into effect the architect producing it will be employed to superintend the execution of the work at the usual commission, but in that event his premium is to merge in his commission. A premium of £20 will be given for the second best plan. The gaol and house of correction may be examined upon application to the gaoler, and further particulars obtained from Mr. G. W. Cumming, Post Office Chambers, Surveyor to the Council, or to Mr. Gidley, the Town Clerk, 15 Bedford Circus, Exeter, to whom each plan, with a statement of the probable cost of carrying it into effect, is to be sent before the second Monday in August. Plans of the present gaol, with sections of the main part of the building and across one of the wards, may be had of the Surveyor to the Council, on and after the 27th instant.

WORKHOUSE.—For the erection and completion of the new workhouse, to be built in the parish of St. Clement, Oxford. The plans, specifications, conditions, and form of tender may be seen at the workhouse on and after Monday, the 8th of June, and further information obtained of the architect, Mr. William Fisher, Headington Hill, near Oxford. Sealed tenders to be sent addressed to Dr. Adams, the Chairman of the Board, St. John's College, endorsed "Tender for Workhouse," on or before Wednesday, the 2nd day of July next, accompanied by the names of two responsible persons, who will join the contractor in the usual bond for the due performance of the contract.

WEST BRIGHTON CRESCENT, PORTOBELLO, N.B.—To set with curbstones, causeway the water channels, horse the footpath, and macadamise the carriageway, of West Brighton Crescent, Portobello. Furnishing all materials, all agreeable to a plan and specification which will be shown to intending contractors by Andrew Bell, Surveyor, any day previous to the 23rd current, on or before which day all offers must be lodged with the said Andrew Bell, at his Office, Council Chambers, Edinburgh, marked "Tender for West Brighton Crescent." The proprietors do not bind themselves to accept the lowest or any tender.

BRIDWELL.—For building a bridewell in the town of Newport, according to plans and specifications to be seen at the present Bridewell in Newport. The contractor will be required to give sufficient security, by recognizance in double the amount of the sum contracted to be paid for such work, to be approved by the said committee, for the due performance thereof. Sealed tenders to be addressed to the Chairman of the Commissioners, Richard E. Phillips, Esq., Mount Rivers, Newport, Tipperary, on or before the 20th instant.

EXTERNAL PAINTING OF CHURCHES.—For the external painting of the churches in the following lots or sections. Each tender must include one complete lot, and the sum for each church must be stated separately. Lot 1: Annadown, Arvon, Athenry, Clifden, Dunmore, Errisannon, Headford, Kileonla, Kilkerrin, Killeen, Monivea, Moylagh, Moyrus, St. Nicholas (Galway), Oranmore (Roundstone), Oughterard, Selnarra, Spiddall, Tuam; county Galway. Lot 2: Achill, Aasleagh, Ballinacolia, Ballinrobe, Ballyhenry, Ballyvogue, Burrischoole, Castletown, Cong, Crossboyne, Drum Belcarra, Killeconan, Kilmna, Knapphale, Mayo, Ross, St. Thomas (Achill), Furlough, Westport (Aughavale), Ayle, Louisburgh; county Mayo. Specifications to be seen in the hands of the resident ministers of the parishes. Each proposal to be forwarded sealed, prepaid, and addressed thus: "Proposals for the Church of . . . The Ecclesiastical Commissioners for Ireland, No. 24 Upper Merion Street, Dublin."

WARDS TO INFIRMARY OF UNION.—The Edmonton Board of Guardians will be prepared, at a meeting to be held at the Union Workhouse at Edmonton, on Wednesday, the 2nd of July next, to receive tenders for the erection of fever wards, and for making certain additions to the infirmary, at the union workhouse aforesaid. Sealed tenders, endorsed "To the Building Committee, Edmonton Union," must be delivered at the office of W. Pulley, Clerk to the Guardians, at Edmonton, on or before the 1st July next. The plans and specification may be seen, and all information obtained, at the offices of Mr. T. E. Knightley, architect, 25 Cannon Street, City.

FARM BUILDINGS.—For the erection of a set of new farm buildings, and making additions to out-houses, at the Moat Farm, Igham, Kent. May inspect the plans and specifications at the office of Messrs. Charlton and Son, surveyors, Tonbridge, on and after Monday, the 16th inst., where sealed tenders, endorsed "Tender for Farm Buildings, &c., Moat Farm," are to be delivered on or before Wednesday, the 25th inst. These works will be carried out subject to the approval of the Surveyor to the Inclosure Commissioners for England and Wales. Payment will be made when finished and certified by the said Surveyor.

DWELLING HOUSE AND OFFICES.—For building a dwelling house and offices on the farm of Corse, on the estate of Craig, in the parish of Balmacellain, belonging to James Caruthers, Esq. The plans and specifications may be seen in the hands of Mr. Huddleston, the tenant, on and after Friday, the 13th current, and offers will be received by the proprietor until the 23rd.

HOP MARKET, WORCESTER.—For raising the roofs of the north and east sides of the Hop Market Warehouse, adjoining the Hop Market Hotel, Worcester, the drawings and specifications of which may be inspected at the office of the architect, Mr. Rowe, 17 Foregate Street. Tenders under seal, and properly endorsed, must be delivered at Mr. C. Pidcock's offices, Foregate Street, on or before Saturday, the 28th instant.

IMPROVING CITY HALL.—Committee No. 3 of the Municipal Council invite architects to furnish Plans for improving the ascending steps and entrance to the City Hall, from Cork Hill, Dublin, and offer a premium of £20 for the plan which may be approved by the council, such plan to be the property of the corporation. Each plan to be marked with a private mark, and delivered with a sealed letter, containing name of architect and private mark, at the office of the Town Clerk, before Friday the 4th day of July 1862.

REPAIRING, RESEATING, AND RESTORING CHURCH.—For repairing, reseating, and restoring the parish church of Bicester, Oxfordshire. Plans and specifications may be seen on or after Thursday, June 12, at the office of C. N. Beazley, Esq., 44 Upper Gower Street, London; or at the house of Mr. Charles Shillingford, Churchwarden, Bicester. Sealed tenders, according to the form supplied, to be sent to the Rev. J. W. Watts, the Vicarage, Bicester, on or before June 26th. Quantities not supplied.

SEWERS.—For laying down, constructing, and completely finishing certain intended brick sewers, in "The Frome Intersecting Sewer District," within their district, about 5,520 yards in length. Persons wishing to contract for the same are requested to forward through the post, on or before Thursday, the 3rd day of July next, by ten o'clock in the forenoon, sealed tenders, addressed to the Committee of the Local Board of Health, 15 Prince Street, Bristol, and endorsed "Tender for Sewers." Any tender not sent through the post will be rejected. The plans and specifications of the works to be done may be seen at the offices of the Local Board of Health; and any further information may be obtained, either on

personal application, or by letter, pre-paid, addressed to the surveyor, Mr. Frederick Asmead, C.E. The party contracting will be required to give sufficient security, to be approved by the Local Board of Health, for the due performance of the contract.

OAK.—Persons desirous of tendering for a quantity of old oak, &c., of finest quality, from the ancient palace of Charles II. at Newmarket, may obtain particulars of Messrs. W. G. Habershon and Pite, architects, 38 Bloomsbury Square, London; or of Mr. John Hassell, Newmarket.

VILLAS AND COTTAGES.—For the erection of a pair of semi-detached villas and six cottages, at Bromley, in the county of Kent; can see the plans at the office of Mr. John Wimbale, architect, Wallbrook, where tenders, endorsed, are to be delivered on or before two P.M. of Thursday, the 26th instant.

CHURCH RESTORATION.—For the re-roofing and the performance of other works and restorations at the Church of St. Peter and Paul, Ospringe, near Faversham, Kent; may inspect the drawings and specification, and obtain further information, on application at the Vicarage, Ospringe, or at the office of Mr. E. L. Blackburne, architect, on and after Monday, the 23rd June inst. The tenders to be addressed and delivered, sealed up and endorsed, to the Churchwardens at Ospringe, on Monday, the 30th June.

HOUSES AND VILLAS.—For the erection of five houses, with retail shops, and four semi-detached villas at Erdington, near Birmingham, can see the drawings and specification at the office of Mr. J. R. Botham, architect, Birmingham; on and after Monday next. Tenders to be delivered on or before Wednesday, the 25th instant. The lowest or any tender will not necessarily be accepted.

BREAKWATER.—The Isle of Man Harbour Commissioners are prepared to receive tenders for the construction of a breakwater, 694 feet in length or thereby, at the Harbour of Ramsey. Plans, sections, specifications and conditions of the work may be seen, on and after the 16th inst., at the offices of the engineer, James Abernethy, Esq., M.I.C.E., 2 Delahay Street, Westminster. Sealed tenders, endorsed "Tenders for Breakwater," to be delivered to the Receiver-General, Richard Quirk, Esq., Douglas, Isle of Man, on or before the 5th day of July next.

BREAKWATER.—The Isle of Man Harbour Commissioners are prepared to receive tenders for the construction of a breakwater, 300 feet in length or thereby, at the Harbour of Peel. Plans, sections, specifications and conditions of the work may be seen, on and after the 16th inst., at the offices of the engineer, James Abernethy, Esq., M.I.C.E., 2 Delahay Street, Westminster. Sealed tenders, endorsed "Tenders for Breakwater," to be delivered to the Receiver-General, Richard Quirk, Esq., Douglas, on or before the 5th day of July next.

ABRIDGED SPECIFICATIONS OF PATENTS FOR INVENTIONS.

From the "MECHANICS' MAGAZINE," June 13.

2911. G. WILLIAM. Improvements in the manufacture or production of plate glass. Dated Nov. 20, 1861. Here the inventor proposes to rob, smooth, or flatten the upper surface of the newly-cast plate by passing to and fro over the same suitable rubber composed of a bar of wood, metal, or other suitable material, a long handle being fitted to such rubber for the purpose of facilitating the working or the operating of the same by the attendant workmen. *Patent abandoned.*

2915. J. C. CROFT. An improved mode of fastening doors, and for other similar purposes. Dated Nov. 20, 1861. This consists in constructing a fastening for doors, drawers, windows, and other like purposes, in the following manner:—A segmental or straight bolt is worked by, or if preferred, fixed to the handle, on turning which the bolt is made to protrude, and enter a groove or other similar provision made in the door jamb; one or more catches or tumblers fall by this movement, and prevent the return of the bolt; therefore, to unlock, it is necessary not only to lift the tumblers or catches, but at the same time to turn the handle. The patentee also makes a key-way in the lock which turns with the key, so that on any attempt being made to introduce a pick the key-way closes itself, and leaves but a very small passage to introduce anything further. *Patent completed.*

2916. W. P. BAYLIS. Improvements applicable to buildings, in order to facilitate the extinguishing of any conflagration which may happen therein. Dated Nov. 20, 1861. This consists in constructing buildings with an aperture, or with apertures, at the upper part of each apartment, the said apertures being in communication with tubes or channels opening into the chimney, or into the external atmosphere. Hence, if a fire takes place in the building, it will only be necessary to close the apartment and the smoke and fire will vent by the said apertures. The invention also consists in placing a cistern or receptacle at the upper part of the building, from which pipes descend which reach from the said cistern to the basement of the building, and may form supporting columns or pillars to it. Suitable branch pipes and valves are employed for conveying the water into any apartment where fire may occur. *Patent completed.*

2935. F. FRYTON and W. F. BATHO. Improvements in laths for supporting bedding and cushions in beds, couches, sofas, and seats. Dated Nov. 22, 1861. This invention consists in constructing elliptical laths, each separate lath being composed of two strips of metal united or brought together at their two ends and bowed towards the centre; between the two strips the patentees fix hoops of steel, volute or other metal spring or springs, to constitute spring laths for supporting bedding, cushions, and seats. *Patent completed.*

2949. E. A. ROWVIERE. An improved pump. Dated Nov. 23, 1861. This consists in the use of two pistons of different diameter, which are firmly secured to each other and work together in a pump barrel composed of two barrels of portions of different diameters, so that, as the pistons move or travel in their respective barrels, the capacity of the space compressed between them—that is to say, the space or portion of the pump bounded by the pistons, and the sides of the pump barrels, shall be continually undergoing variation, being either increased or reduced according to the directions in which the pistons travel—that is to say, when the direction of the piston's motion is such that the larger piston is moving towards the smaller barrel, and the smaller piston is receding from the larger barrel, the capacity of the said space is contracted or reduced; and when the pistons move in the reverse direction, the capacity of the said space is increased or enlarged, by which the forcing and suction of the water liquid is effected. *Patent completed.*

2952. J. B. HILLARD and L. G. POUPET. An improved process for hardening stones and plaster of Paris, and making them impervious to water. Dated Nov. 25, 1861. The composition which the patentees prefer for their indurating liquid is composed of the following ingredients in certain proportions:—Borax, white lead, sulphur of alumina, acetate of lead, sulphate of zinc, silicate of soda or potash, ravin, linseed oil, and water. *Patent completed.*

2959. J. H. JOHNSON. Improvements in machinery or apparatus for preparing oval picture frames. (A communication.) Dated Nov. 25, 1861. This consists, essentially, in the use of a scraper or working down tool, in combination with the force plate of an eccentric lathe, or with an elliptograph or other suitable apparatus, the scraping tool being made self-adapting to the irregularities or variations on the scraper of the frame, and its scraping edge being the reverse of the intended moulding. When an eccentric lathe is used, the oval frame is mounted upon the face plate of the lathe, and describes an oval or ellipsis when rotated, whilst the scraper remains stationary, but is held against the frame by a yielding pressure. Where an elliptograph, or other similar contrivance is used, the oval frame is laid upon a stationary bed, and the scraper is caused to travel over its surface by the action of the elliptograph, it being at the same time free to rise and fall, so as to allow of any irregularities on the surface under treatment. *Patent completed.*

2968. I. DAVIES. Improvements in the construction of roofs for dwelling houses, horticultural erections, and other buildings. Dated Nov. 26, 1861. The inventor constructs the roofs of dwelling houses, warehouses, sheds, &c., by forming the outer edge of the rafters, or of, say, every alternate rafter, with one or more grooves or channels, which he covers with sheet lead or other metal. Over these, without the interposition of battens, he places the slates, tiles, stones, &c., made of such a size that in their vertical course their edges shall abut against each other, just over the grooves or channels, to allow these latter to convey away water. In their horizontal course each succeeding one overlaps the other, and carries the water downwards in the usual way. *Patent abandoned.*

2969. R. HARGREAVES. An improvement or improvements in fastening knobs to doors, drawers, and other articles; and in connecting knobs to spindles. Dated Nov. 26, 1861. This consists in fastening knobs to doors, drawers, &c., and in connecting knobs to locks or other spindles, by a divided collar or plate, which is made to engage with the flange or shoulder which terminates the neck of the knob, or to engage with the neck of the knob. The invention is not described apart from the drawings. *Patent completed.*

PROVISIONAL PROTECTIONS.

1588. T. McIlroy, Brampton, Canada West. An improved invalid bedstead. Dated May 9, 1862.

1551. H. C. R. Joubert, upholsterer, 18 Maddox Street. Improvements in raising music chairs, stools, or seats. Dated May 14, 1862.

1512. F. C. Kirkman, Crouchend, Hornsey, and Richard Swift, Hounslow, civil engineers. A new and improved joint for uniting or fixing posts and rails of bedsteads and other articles of furniture, posts, and rails in fencing, in the construction of framework for conservatories, emigrants' and other portable houses. Dated May 19, 1862.

PARTNERSHIPS DISSOLVED.

Mowl, Brothers, Bethnal Green Road, carpenters.
Spinks and Codner, Barton-on-Humber, Lincolnshire, painters.
Newark and Sons, Coventry, timber-merchants; as far as regards W. D. Newark.
Taylor and Co., Oldbury, Worcestershire, ironfounders; as far as regards J. Botteley.

BANKRUPTCY ANNULLED.

John Lawrie Rickards, Parliament Street, Westminster, engineer.

BANKRUPTS.

Esther Perry, Enfield, plumber, July 1, at 10, to surrender at the Bankrupts' Court, Basinghall Street.

Thomas Timmis Vernon Smith, Park Road, Islington, engineer, July 1, at 11. Basinghall Street.

Samuel Wood, Queen Street, Blackfriars Road, bricklayer, July 1, at 11. Basinghall Street.

John McIntosh, timber merchant, Bow Lane, Cheapside, July 4, at half-past 11. Basinghall Street.

William Wicks, High Row, Silver Street, Kensington gravel-pits, carpenter, June 30, at 1.

Henry Wood, Birmingham, brass caster, June 23, at 12. Bankrupts' Court, Birmingham.

George Hague, Sheffield, mason, June 30, at 10. Bankrupts' Court, Sheffield.

Henry Chesworth, late of Audlem, Cheshire, wheelwright, June 23, at 12. Bankrupts' Court, Liverpool.

Robert Cleaver, Stretton-upon-Dunsmore, Warwickshire, carpenter, June 25, at 11. County Court, Rugby.

William Schneider, Middlesborough, Yorkshire, journeyman joiner, June 27, at 2. County Court, Stockton-on-Tees.

John M'Alister, Cardiff, contractor, July 4, at 11. Bankrupts' Court, Bristol.

Thomas Kirkbride Waller and Christopher Graham, Holme Cultram, Cumberland, timber merchants, June 30, at 1. Bankrupts' Court, Newcastle-upon-Tyne.

Robert Henry Howard, Kingston, Portsea, painter, July 15, at 11. County Court, Portsmouth.

George Wilson, Coppull Moor, within Coppull, Lancashire, wheelwright, July 10, at 9. County Court, Chorley.

Thomas Vaughn, Tonbridge Wells, builder, June 30, at 12. County Court, Tonbridge Wells.

William Beer, Devonport, journeyman stonemason, July 2, at 11. County Court, East Stonehouse.

George Birch, Wolstanton, Staffordshire, joiner, June 28, at 11. County Court, Hanley.

NOTICE OF SITTINGS FOR LAST EXAMINATION.

June 30, W. G. P. Britten, Bridge Road, Battersea, engineer.

July 4, A. Brown, late of Liverpool, engineer.

June 26, R. Cumberbach, Great Bolton, Lancashire, engine-fitter.

July 22, J. Parkinson, Barnoldswick in Craven, Yorkshire, joiner.

June 26, W. Dunckley, Luton, builder.

July 9, J. Steele, Stroud, cabinet-maker.

July 15, J. Talbot, jun., Sparkford, Somersetshire, carpenter.

July 8, B. Tranter, Tipton, cooper.

July 9, W. Dunhill, Pontefract, journeyman joiner.

July 11, M. Page, Stratford, builder.

July 10, H. Gratton, late of Canning Place, Kensington, Rolls Buildings, Fetter Lane, Chancery Lane, and Poet's Corner, Westminster, engineer.

July 10, C. Phillips, Totteridge, Hertfordshire, carpenter.

July 17, H. Grove, Rowley Regis, Staffordshire, carpenter.

July 15, A. Ford, Newark-upon-Trent, coachbuilder.

June 24, G. Burton, Bedford, engraver.

June 25, R. Bullimore, the younger, Great Yarmouth, house carpenter.

July 2, E. Jones, Edge Hill, West Derby, bricklayer.

July 3, J. Andrew, Crookes, near Sheffield, journeyman joiner.

July 12, J. Fletcher, Torquay, carpenter.

July 29, J. Hailstones, Chatterley, Staffordshire, mining contractor.

July 5, H. Burrage, Brighton, plumber.

July 5, R. Puttick, Brighton, carpenter.

June 30, A. Piper, Tonbridge Wells, labourer.

June 25, T. Fox, Great Yarmouth, builder.

DIVIDENDS.

July 11, G. Scott, Cubitt Town, Isle of Dogs, engineer.

July 17, G. Roper, Bincombe, Dorsetshire, builder.

July 9, W. Sparke and E. Brydges, Strand, ironmongers.

July 4, T. R. Oswald, Sunderland, ship builder.

SCOTCH SEQUESTRATION.

George Battie, Edinburgh, builder, June 20, at 1. Dowell's and Lyon's Rooms, Edinburgh.

TO CORRESPONDENTS.

We cannot undertake to return rejected communications.

WORKS IN PROGRESS.—We shall feel obliged to any of our readers who will favour us with notes of works contemplated or in progress in the provinces; in most cases a simple mention that a work is about to be, or has already been commenced, will be sufficient.

Received.—W. R. M., M. O. S., J. R. W., T. D. J., P. and A., M. B. N., J. W. T., E. H., G. and B., T. H., B. L. D., T. A., G. S., J. W. W., E. H., W. B., E. B.

** NOTICE.—The BUILDING NEWS is now published at 166 Fleet Street, where all Communications and Advertisements should be addressed.

MR. G. G. SCOTT, ARCHITECTURE, AND CIVILISATION.

GO where we may, we meet with egotistic people. Most people think more of themselves than others think of them. They put a higher price on their works than can be realised. They think more of their own profession than all other professions put together. Mr. G. G. Scott is one of those people. Listen to what that gentleman said in his lecture, at the South Kensington Museum, on Tuesday week, "On the Formation of a National Museum of Architecture, viewed in connection with its Bearings upon Mediæval Art." "*The history of architecture*," says Mr. Scott, "*is the history of the world; it is the history of the changing power and dominion of races and nations; it is the history of human thought, and of the growth, the fluctuations, the decay, and the revival of human civilisation.*" This is a fine sentence. Let us analyse it, and see what it is made of. We have hitherto considered architecture to be one of the expressions of a people's intellectual and industrial condition; one of the manifestations of its social and religious life. But Mr. Scott steps upon the scene, and recklessly brushes away every other incentive to action, every other spring of human progress. If he is correct, henceforth and for ever architecture and civilisation are synonymous terms; and science, religion, freedom, agriculture, statesmanship, heroism, patriotism, navigation, literature, geographical advantages, race, and the thousand-and-one things which make up the sum total of human effort, progress, and happiness, are as many empty names.

We do not remember seeing or hearing a single sentence which contains so many mischievous fallacies as the one just quoted, and we are surprised that some one did not rise in the meeting and rebuke Mr. Scott for his misconceptions, his exaggerations, and extravagant language. If this is a fair specimen of his teaching, then are the blind leading the blind. We are prepared to give Mr. Scott or any one else "ample room and verge enough," where he may air his hobby to his heart's content; but when he ignores everything and everybody else, when he builds up his pet idea on the ruins of ideas equally dear to other men, when he advances the pretensions of his own profession at the expense of other professions, when he gives a contemptuous go-by to every great element of civilisation in order to magnify the one which he represents, he speaks egotistically, incorrectly, and deceptively.

Mr. Scott makes architecture the be-all and end-all of human life. Men, according to this theory, are born for no other purpose than to build and decorate houses and cathedrals. When a man has done something towards the architecture of his country, or, we suppose, stood in its presence and uttered some grandiloquent language about it, he has answered his purpose and may go hence. Mr. Scott's description of architecture reminds us of the Wesleyan preacher, who used a great many fine words to prove that all the vast enjoyments and employments of the inhabitants of heaven consisted in psalm-singing. When about to take a tour in Wales, some years since, a Welshman, less egotistic and more satirical than most of his countrymen, said that if we wished to make friends wherever we went, we should say that Adam was a Welshman, that Paradise was in Wales, and that the Welsh language would be the language of the millennium. In a similar way, any one may make a friend of Mr. Scott by saying architecture was the alpha and omega of human existence and human history.

Now civilisation is not so simple and so one-sided a thing as our mediæval teacher would have us believe. It is many-sided, and derives its life and power from many sources. Mr. Scott, in developing his idea of an architectural museum, appealed to classical times and peoples. Nobody knows better than that gentleman, that the Greeks were as famous for their language, their literature, their laws, their patriotism, and their martial prowess, as they were for their architecture; and that ancient Rome rendered herself more famous by her orators, generals, colonisers, consuls, and lawgivers, than she did by her architects, and that she wrought her impress more deeply in the world's civilisation by her Will than she did by her conception of Beauty.

It would be impossible to say in a single word or a single sentence in what our English civilisation consists. We are a peculiar people, and are doing as much, if not more, for civilisation than any nation that has existed or does exist. No doubt, if certain one-idea men were appealed to, they would easily define to their own satisfaction the true secret of England's greatness and her true mission amongst the nations. One would say that the English were a great people, because the blood of many races mingles in our veins — that the Saxon, the Celt, the Scandinavian, the Teuton has each, in his turn, contributed to our strength. Another would show that the power of the Englishman consisted in his individual freedom, in his municipal institutions, and the constitutional government under which he lives. Another would point to facts, and prove that the sources of our strength and our progress were in our geographical position, and

in the treasures of tin, copper, iron, and coal, under our soil. Another would point to the application of the principles of political economy and free trade amongst us as the source from which our national energies are fed. Another would say that England was mighty and renowned because "Britannia ruled the waves," and that, as a consequence, our commerce whitened every sea and kissed every shore. Another would maintain that our commerce, our agriculture, and our enterprise depended on the application of science to industry, and that the English were particularly distinguished for regulating and utilising the forces of nature by scientific appliances. Even Mr. John Bright, whom some would accuse of being a one-idea man, stated in the House of Commons, a short time since, that our greatest men were not our warriors or our statesmen, but our engineers, who created new industries for men, and transformed the face of nature. But Mr. Scott appears to see little or nothing in the applied sciences, in industrial endeavours, in well-regulated laws, and admirably balanced constitutions. One subject attracts his gaze and absorbs his attention. He has been so long accustomed to the "dim religious light," that his vision is impaired. All other things, whatever may be their age, their magnitude, or their influence, are but dust in the balance, when compared to architecture, for "the history of architecture is the history of the world; it is the history of the changing power and dominion of races and nations; it is the history of human thought, and of the growth, the fluctuations, the decay, and the revival of human civilisation." Here, certainly, the "nothing-like-leather" theory has reached a climax. Sea-kings, conquerors, Tubal-Cains, Cæsars, Luthers, Cromwells, Ciceros, navigators, discoverers, Homers, Dantes, Napoleons, Shakespeares, are mere waifs on the mighty stream of architectural civilisation. It has been said that every mother's duck is a swan, but Mr. Scott's duck is a bird of paradise, whose plumage is so dazzling that it utterly eclipses all surrounding objects. If Mr. Scott were a general, he would extinguish the stars for the sake of Mars.

No good result can be gained by exaggerations like this. He is the truest artist and the best teacher who can see things in their true light and real proportions, and who can assign to each art, science, and organised effort its relative importance. The hand must not say to the eye, "I have no need of thee," neither must the heart say that the brain is superfluous. All organs and faculties must harmoniously work together for the correct life of the individual; so must the musician, the soldier, the miner, the husbandman, the metal-worker, the architect, the navigator, the philosopher, and lawmaker work together, each in his particular sphere, for the general good. Let me make the songs of a people, said a statesman, and I don't care who makes their laws. What would Mr. Scott think, if Tennyson, before an audience of literati, said, "The history of poetry is the history of civilisation," &c.? Would he not think that the laureate was the victim of a disordered fancy? May not the laureate return the compliment? Does not literature exert a much more potent sway over civilisation than architecture? Let not the poet attempt to snuff out the architect, or the architect attempt to snuff out the poet. Each has a mission to perform essential to the higher wants of man. Civilisation, in its slow but sublime march, asks for the poet's song, the orator's electric fire, the worker's anvil and furnace, the warrior's courage, the architect's realised conceptions, the patriot's struggle, and the martyr's blood. All are invited to bring their respective contributions to the sum total of individual and organised endeavours. Mr. Scott will do a more worthy work if he will occasionally come *outside* the Mediæval edifice, and acknowledge the presence of trees, streams, mountains, flowers, and stars. At all events, he may acknowledge the existence of, and give a passing salute to, other workers in the vast vineyard of civilisation.

INTERNATIONAL EXHIBITION.

CARVED GOTHIC STONWORK.

A SMALL court to the south-east of Minton's Majolica Fountain, in the International Exhibition, daily attracts a peculiar class of visitors. Mere sight-seers tacitly acquiesce in the obstruction which has been placed before its entrance, and indulge only in a somewhat distant view of the several groups of inlaid masonry and jewelled stonework. A few, seeking a short return-cut from the rear of Magnus' Enamelled Slate Court to the main avenue, find further progress here impeded by the dark cellar which forms its northern boundary, and which contains the shattered hopes of several disappointed contributors, mingled, in dust and dirt and damp, with colour-pots and lumber. Thus checked, they look for a moment through the sash partition into the gloomy cave, and then bestow a glance or two upon the fine works with which they have undesignedly been brought into close proximity. The visitors who seek out the court, and purposely examine its contents, are men of clerical appearance, dressed in solemn seriousness, upon whose faces beards are never

seen, whose shirt fronts are veiled by broadly-spread glossless waistcoats, and whose coats are long and without a blemish. Hats with a quaint curl of the brim, cover some of their heads, and cloth gaiters their lower limbs. Their opinions of the different works are given rather loudly, with a measured stateliness, to their companions, and are regulated more by their affection for High or Low Church, than by their acquaintance with high or low art. The same section of Englishmen are seen in force in what is called the Mediæval Court, condemning contemptuously, or preposterously praising, that which is the embodiment, in wood or stone, of their several predilections. Stirring busily amongst these quietly moving men, are others more voluble, who appreciate every piece of fluor-spar mosaic which Mr. Street has set in his work, every line of colour and square of marble which Mr. Bentley has designed, and every figure and fragment of ornament which Mr. Earp has with such unerring precision hewn from the rough stone.

This Court is devoted to the best work of one of our ablest Gothic carvers, Mr. Thomas Earp, of Kennington Road. The examples of his craft are here gathered for a little time together, before being dispersed to their several destinations. One only has been expressly prepared for this Exhibition. It is a little richer in its decoration, but no better in its execution than the others, which are the ordinary productions of his workshop. We thus have a fair sample of his skill, and it is satisfactory to see that it is not here wasted upon unworthy design. It is, perhaps, quite natural that architects who can design like Mr. Street, Mr. Bentley, and Mr. Nesfield, should appreciate Mr. Earp's ability to do justice to their conceptions; but it also too frequently happens, that men of feeble powers seize upon a strong and experienced hand to eke out their little knowledge. Saddening work of this latter kind must have entered for reformation into Mr. Earp's as into other men's workshops, but we have no specimen of it here, and we distinctly repeat, they are no show specimens of Mr. Earp's work, although they may be of what his work is only occasionally united with. He cannot be expected to devote himself exclusively to our foremost architects, and is no doubt content that they have afforded him opportunities of testing his capacity to compass their conceptions, and of showing how Gothic carving can be done.

On the left of the Court stands a dairy fountain designed by Mr. W. E. Nesfield, for the Earl of Sefton. It is about 6 ft. high. The whole is of stone: the large circular basin is lined with lead, which laps over the top, where it is ornamentally cut, and secured with large conical-headed nails. This basin is carried by eight detached dwarf columns, with wide spreading basins and carved capitals, which cluster round a sturdy central shaft. From the centre of the basin rises a short column with a green marble shaft and splayed abacus instead of capital; foliage, curling outwards, ornaments its angles, and engraved metal plates its sides. The jets of the fountain come through these plates and are fashioned into metallic resemblances of dolphins' heads—not the blubberous bunches which renaissance architects have bequeathed to us, but, instead thereof, something wherein the grossness is pared away by art, making them much fitter for their purpose, and in better harmony with the ornament to which they are allied. The vertical sides of the basin are decorated with incised representations of spring, summer, autumn, and winter, and between each of these subjects squares of mosaic marble are inlaid. On one of these mosaics a peacock is portrayed, with a delicious combination of coloured material, but what analogy there is between the proud bird and a dairy, we are at a loss to discover. On another, a quaint conceit reveals to us the milky way—"thick inlaid with patines of bright gold" and circles of creamy whiteness. The architect might as well have given a plain English name to this panel; it would have been as comprehensible as a good and far better than the bad Latin one which it now bears. There is a trifle of affectation in the subject panels, which might, moreover, we think, have been more appropriately filled, but the design altogether is a grand one, and well realised.

Near this fountain is the reredos for St. Philip and St. James's Church, Oxford, designed, as all our readers know, by Mr. Street, and carved by Mr. Earp. It consists of a central pointed arch, with foliage in the angle-mouldings, supported by the carved caps of green shafted dwarf columns. The abacus of these columns is extended as a string on both sides, where, over it, single trefoil-headed niches or deep sunk panels are introduced, and under it the surfaces are decorated with inlaid colour. A large and two smaller plain gables, crowned by finials, surmount the three panels respectively. The side panels contain figures of a couple of saints, and the central one a well carved representation of Christ in the Garden. The reliefs have a true mediæval sentiment, without an atom of the bad drawing which is by too many considered inseparable from it. Cusps are introduced superficially in the large panel following the lines of the arch, and their spandrels are studded with globules of spar, which we venture to think are no improvement to the design. The surface of the reredos is decorated with red and green inlaid ornament, which,

if the result be not caused by its association in this Court with more brilliant work, is too low in tone and has rather a common-place tawdry appearance.

If its juxtaposition with something finer mars its effect, the damaging neighbour is Mr. Street's own work. It is the excellence of the pulpit for Bournemouth Church which overshadows that of the Oxford reredos. No finer work ever came from Mr. Street's hands, no better carving ever left Mr. Earp's. The "fatal facility," for designing ornament and figures which too often crowd the details of Mr. Street's designs, is here kept well in subjection, although we must own that, spite of its faultless execution, and of the purity of its conception, we should not have mourned the loss of the angel which supports the reading shelf. It is, even with this drawback, a most lovely piece of work, rich and yet delicate in its colour, bold in its supports, and tenderly treated in the belt of arcaded alabaster which they bear. The lower portion is of stone. The dwarf columns rest on a high plinth and their moulded caps die beautifully into the hollow which bends forward to enlarge the upper portion. The lower portion of the drum is formed into quatrefoil panels, filled with a lovely arrangement of green, grey, red and white marbles, and a central disk of spar set in a slight ring of indented stone. The alabaster arcade is continued round, and forms the boundary of the pulpit. It has trefoiled arches, and splendidly carved heads in the spandrels, and the whole is capped with a moulded cornice, having a tooth ornament. The pulpit is a fine example of harmonious colour. Stone, alabaster, and coloured marble all help each other. They are not only rightly placed, but they are what is perhaps less studied by modern architects, of the proper tone. There is nothing violent, strained or affected in the work, and the more we examine it, the greater is our admiration both of the design and of the execution.

The little font at Huntley Church, designed by Mr. S. S. Teulon, and carved by Mr. Earp, is a very good specimen of the purer English Gothic work, that is, it has no colour, except in shafts of columns, and contains less admixture of foreign elements. It is an octagon, supported by four columns with carved caps. The ordinary baptismal emblems are introduced, in panels, on the octagon sides, and half-figures of angels at the root of the basin are so well incorporated with the design, that they appear to grow out of, instead of being stuck upon it. Between the columns, standing or sitting on the plinth, mannikin emblems of the Evangelists are placed. They are beautifully carved, but the little dolls are no ornament to the design, and their removal would relieve it of its only puerile features.

Mr. Bentley's reredos, executed expressly by Mr. Earp for the Exhibition, is built up on the southern side of this Court. It does not, perhaps, in delicate and tender treatment, equal Mr. Street's Bournemouth pulpit, but it is, nevertheless, a remarkably fine work—rich in material, and richer still in art. It is divided horizontally into three compartments, the lower one is intended to be fronted with the altar, and is, therefore, plain, with only an angle column at each corner. The central compartment bears six panels, filled in with what appears to us a continuous representation of St. Michael's combat with the devil. The figures are white, on a black ground; surrounding the diamond slabs which bear these representations are green and red marble mosaics, with jewelled centres. The alabaster framework is chased, and filled in with colour. Marble shafts rest on a broad black string below, and enclose on either side the whole of the reredos. A kind of buttress, highly and originally carved, rests on each of these caps, and is united with the main cornice. The upper compartment is divided by marble shafts into three divisions, which bear upon their projecting caps figures of Uriel, Michael, Gabriel, and Raphael, beautifully carved in white alabaster. These three divisions are filled with oval panels. The two outer ones contain figures in relief, and the centre one a rich jewelled cross, with emblems of the Evangelists between the branches; a mosaic ground is fitted to all the panels. Another row of rich fluor-spar jewels runs along the top of the cornice. The reredos would be a striking feature of any church, but we should like to see it in a building designed and executed in thorough keeping with it.

Another joint production of Mr. Bentley and Mr. Earp ornaments the nave. It is a drinking-fountain. To say that it is better than any hitherto built in London, is but poor praise. It is fully equal in merit to the reredos which we have just described, and has the same amount of thoughtful originality and dexterous workmanship.

Adjoining Mr. Earp's court, the doorway of the mortuary chapel of the Digbys, now building at Sherborne, Dorset, for G. D. W. Digby, Esq., is partly built up. The arch over it is wanting, but a photograph placed by the side of it enables us to realise its effect when complete. It is very early pointed, and every moulding of the jambs and arches is crowded with foliated ornament. The shafts of the columns are of coloured marble, but Mr. Slater, the architect, has not, we think, been happy in his selection of the colours; we question if a variety in them was necessary, but, at all events, the alternate red, green, yellow, and red, do not enrich the work, and in the inside, where two

colours are introduced in the same shaft, separated only by a stone ring, the effect is disastrous. The tympanum of the arch will contain the sculptured group now exhibited in the Mediaeval Court by Redfearn. The carving is excellently done by Messrs. H. Poole and Son, of Great Smith Street, Westminster. The same carvers, in the immediate vicinity, exhibit two fine and valuable specimens of inexpensive wall surface decoration, which depend almost entirely upon the ability with which they have been designed. They are made by incising slabs of alabaster, and filling in the channelled lines with different-coloured cements. In the centre of one, there is a good and original representation of the Lord's Supper, boldly etched from Mr. R. T. Bayne's design (of the firm of Clayton, Bell, and Bayne, the well known glass painters). The essential point in this system of decoration is excellence of design, and this Messrs. Poole have procured. Over one of these specimens, on the east wall, we find eight carved bench ends, designed by Mr. Slater for Chichester Cathedral, and executed by Mr. Forsyth's practised hand. Like the doorway of the Digby Chapel, they are crowded, perhaps overcrowded, with work, and like it the work is of the best kind.

Near it, a long unfinished reredos, by Mr. James Williams, of Ipswich, awakens a regret that so much labour should be applied to so little good purpose. When we say that the central compartment aims at producing a reduced copy of Leonardo da Vinci's Last Supper in relief, it is sufficient, perhaps, to characterise the work. The other compartments represent incidents in the life of Christ. We are sorry to condemn anything which may be the production of a working man, ambitious of exhibiting his work amongst the productions of the world, but there is nothing to interest any one who knows aught of art, except an industrious, although unsuccessful attempt to achieve something great. As regards design, whether of architecture or sculpture, it is in no way better than the specimens executed by the students of the Architectural Museum. The prize designs for wood carving exhibited by the students of the Architectural Museum, placed in the immediate neighbourhood, are very creditable productions, and the extra prizes were well earned, and very properly bestowed.

If the huge ungainly pulpit, which Messrs. Cox and Son exhibit in this part of the building, be sent simply as an example of the facility and cheapness with which Corsham Down stone may be most elaborately carved, there can be but one opinion about its success. As a work of art it is not worth as many pence as it is ticketed with pounds (80). It is in shape like a grog-tumbler, and represents an oak-tree, with its gnarled root and trunk as a support. It is covered with leaves, admirably copied we admit, but what has it all to do with a Christian church? What building could it suit, or what structure could be built to suit it? It might be becoming to a portly member of the order of Druids, whose ignorance of art and affection for the oak might cause him to feel proud within or before it, or it might be inoffensive in the chapel of the Asylum for the Blind. We can think of no other destination for it, even at the insignificant price put upon such a large display of skilful labour.

THE ARCHITECTURAL ALLIANCE.

IT is proposed (as was suggested by us not many weeks ago) to hold a preliminary meeting of deputies from Architectural Societies, to establish an Architectural Alliance, on the 2nd of July. Whatever the result, for we cannot but feel that as yet the Alliance is only a mere project, and one which it will be perhaps difficult to render practical, we must honour the intentions with which the scheme is planned, and desire that they may be fulfilled at no remote time, and in no scanty measure. An intimate relationship among the various members of the profession, and a correspondence between the various societies, are most desirable, but we are not sure that the machinery now proposed is exactly the best for accomplishing these ends.

Perhaps the proposed alliance may be either greatly modified, abandoned, or superseded; in either case the promoters will no doubt feel disappointment. The great aim, however, to be gained is not the establishment of this or that mode of union, but the recognition by the societies and their friends, of the idea of union, cooperation, and correspondence. That recognition is partially accomplished, and no amount of difficulty or delay can rob Mr. Pritchett and his friends of the credit of drawing attention to it, and impressing it on the minds of many, as well as familiarising the societies with it, and having sketched an outline upon which it may be based.

In our article already referred to, we spoke of the conspicuous absence of the Institute, and we cannot help feeling that the scheme ought to have emanated from that body, or at least to have been promoted by it. It now remains to be seen whether (as in some other cases) the Institute will adopt what it has not initiated, will propose a scheme of its own, or will prefer for the present to stand aside. An association of Societies with the Institute at its head, is probably, if not certainly, one of the things which sooner or later will be realised.

As it may be a necessity, or at least is becoming one, it would be graceful to recognise the movement which originated in the North, and to give it the benefit, support, and guidance which the leading Society can so well furnish.

If, declining this course, the Institute adopts a plan of its own, we hope it will be such an one as can command the cordial cooperation of the other societies.

We hope that the delegates who are to meet on Wednesday will not lose sight of these considerations. The abstract principle that an alliance is desirable, will probably be agreed to at once. The simple organisation proposed, stands a fair chance of being adopted, and the delegates may think their work done, when, in fact, the serious part of it has hardly been touched. Organisation is a simpler matter than mastering the difficulties of the work to be performed. These difficulties, however, must be foreseen and provided against, or they will compromise permanent success. They have their rise partly in the novelty of the proposal, partly in the fact that it has not originated in the metropolis, and partly in the temper and the instincts of the bodies of men most chiefly interested. Good feeling, good sense, and openness, an earnest desire for the general good, and the forbearance and conciliatory spirit to which such a desire gives rise, will, however, overcome, in the long run, all obstacles; and if only these qualities be brought into play, we doubt not that the history of the alliance of Architectural Societies will be a long and a happy one.

THE EXHIBITION AND THE SATURDAY HALF-HOLIDAY.

A CORRESPONDENT in another column calls on the Commissioners to open the International Exhibition on Saturdays for a shilling. We see many reasons why this should be done, and scarcely a reason why it should not be done. The only reason of any force which can be brought against the suggestion is that the season tickets were purchased, in the first place, with the distinct understanding that Saturday should be a five-shilling day, and that an alteration would be an infraction of an agreement. Now, as season ticket holders, in most cases, can attend almost any day of the week as well as Saturday, without any inconvenience to themselves, we think the Commissioners would be perfectly justified in making the alteration. There can be no doubt that such an alteration would be hailed as a boon by hundreds of thousands; the revenue of the Exhibition would be improved, and a significant encouragement would be given to the Saturday half-holiday movement. These are three advantages which would more than counterbalance any inconvenience that might be felt by the few. We hope the Commissioners will well consider the suggestion with a view to its adoption, and they would do something to efface the memory of the many blunders committed in the earlier stages of the Exhibition.

INTERNATIONAL EXHIBITION.

MACHINE TOOLS.

IN instituting a comparison, as many of us are able to do, between the "Machine-tools" shown in the Exhibition of 1851 and that of 1862, we can scarcely fail to be struck by the fact, that really very few improvements have been made in them during the eleven years which separate the two great events. In speaking of machine-tools, we refer more especially, however, to those which are used in the manipulation of iron. For instance, the lathe, planing, slotting, and drilling machines exhibited on the last might very well take their places on the present occasion, so slight is the alteration which has been made in them. The lathe is by far the oldest contrivance of the series, and it is still the most generally used in the construction of machinery. In its most complete and perfect form, as, for example, when made by our Whitworths and our Fairbairns, the lathe may be considered as a kind of universal appliance, for to a great extent it may be made to supply the place of every other. It will bore, drill, cut the threads of screws, and even plane the surfaces of iron plates. The lathe was exceedingly well represented in the Exhibition of 1851, and little more can be said of it in that of 1862. We are aware, nevertheless, that, owing to the general increase in the size and power of steam-engines, and especially of those for marine purposes, many gigantic lathes—which could not well be sent to South Kensington—have recently come into existence. These are principally used for boring out large cylinders, turning monster crank-shafts, and for other purposes of a like character. Still, we maintain that few actual improvements have been made in the lathe, as a machine-tool, since 1851.

Pretty nearly the same remark applies to the planing-machine. This has certainly undergone no startling modification during the last eleven years, though it is, in some minor respects, improved. Again, the monstrous size of some of these has prevented their being displayed at the Exhibition, and, in order clearly to understand the changes effected in their construction, it would be necessary to make a tour of the great engineering establishments of the United Kingdom. The ends of mammoth girders, for railway and

other bridges are, in many instances, planed, and this has necessitated the introduction of machines of corresponding magnitude for the purpose of accomplishing the operations. In such cases, planing-machines are shop fixtures, so to speak, and specimens of them could scarcely be expected to be found in the Exhibition.

In speaking of the small apparent advancement which has been made in machine-tools during the period alluded to, it must not be supposed that we are indulging in the propensity for fault-finding which is said to be characteristic of Englishmen. We merely point out a fact, which, as scientific journalists, we feel bound to do, and which indeed to the mechanically trained eye is strikingly apparent. Machine-tools have, during the last quarter of a century, played a most important part in the economy of engineering and mechanical establishments, and in the future their mission will be of a yet more momentous nature. The want of such appliances was most painfully felt by the early manufacturers of steam engines, and Watt in particular, must have been greatly embarrassed thereby in his strenuous and successful endeavours to improve this wondrous machine. As usual in the mechanical world, necessity gradually incited invention, and this evolved machine-tools. Nasmyth's construction of the steam-hammer arose from the necessity of forging an unusually large shaft of iron. The impossibility of guiding with accuracy a hand-turning tool, led to the formation of that invaluable adjunct to the lathe—the slide-rest; and the vibration of a bar of iron, while being turned in a single lathe incited Whitworth to the devising a duplex instrument. Numerous instances of a similar nature might be adduced, and those who are familiar with the interior arrangement of a mechanical workshop, are aware that ingenuity is constantly being exercised to overcome incidental difficulties. In reality machine-tools are now the means by which almost all improvements are effected in machinery, and thus indirectly they minister largely to the progress of the arts and sciences.

It would be scarcely just to omit saying that in the matter of machine-tools, the foreign exhibitors have made a display in 1862 far in advance of that made by them in 1851; but then in the last-named year they cut a very sorry figure.

BUILDING OPERATIONS IN PARIS.

(From our Paris Correspondent.)

THE impression forced upon me by the vast architectural works of the last few years in Paris is that, with every drawback which criticism can suggest, the architects of France are on the way to develop a truly national school of architecture, which will not be a mere *réchauffé* of ancient Gallie art of any former period, but a style which, though arising from a development of the Franco-Italian manner of the sixteenth century, will yet possess sufficient originality, both in principle and detail, to give it a claim to almost entire originality. The developments of the architectural feeling of the Renaissance and immediately succeeding periods are, though perfectly legitimate, yet so free and striking, that they have nothing of the disappointing effect of those slavish reproduction of models belonging to former periods, which, however great may be the skill of the imitator, are always inferior to the originals. They are not, and necessarily cannot be, or appear to be, instinct with the artistic life of an epoch. The very best of such reproductions are mere shams; they are, as it were, wine from a bottle that has been opened long ago; there is no effervescence about them—no sparkle of real vitality. But when a former style, a suitable and national one, is taken merely as the nucleus of a new one, merely as a centre from which appropriate variations, dictated by the spirit of the time, are to radiate, exhibiting palpable signs of a new life at every point of the circle of its operations, then a legitimate use is made of the models, spared by time, which the genius of our artistic forefathers has bequeathed to us.

The additions to the Louvre have been devised and executed, to a great extent, in this spirit, and with all flaws and defects, which are many, they must be, on the whole, regarded as among the most remarkable productions of modern architecture. But it is in the street architecture of Paris, that the most originality of a genuine kind has been exhibited. In great works immediately under the control of the Government, such as the completion of the Rue de Rivoli, &c., the principle of uniformity, and a strictly military alignment, have shackled the invention of the architect, even in his treatment of merely decorative features; but where no such impediments have stood in the way of the artist, true architectural gems have sprung up, that in many respects leave far behind the most graceful structures, even of the graceful age of Francis I.

There is not, at the present moment, any architectural work of strikingly novel character in progress, and yet much is going on well worthy of a passing record. Those acquainted with Paris and its public establishments, cannot fail to remember the situation of the "*Conservatoire des Arts et Métiers*," in the most crowded part of the Rue S. Martin. The establishment is one devoted to the protection and encouragement of improvements in various branches of manufacture, and to the preservation of models of new machinery, &c., &c., for which protective *brevets* have been granted. The establishment has long occupied the remains of the extensive buildings of the ancient Priory of S. Martin, suppressed at the Revolution. During the present régime, many improvements have taken place in the adaptation of the building to its present purposes. The entrance, however, was obstructed by several houses, which had been built by the monks along their frontage to the Rue S. Martin, with the view of increasing their already plentiful revenues, and in that commanding situation the project no doubt

answered the expectations of the worthy speculators. These houses were built in the years 1713 and 1714, so that their existence of but a single century seems but a short one for such solid structures.

The space gained by the removal of these houses, not only throws open the present façade of the main building, but affords space for the erection of a new gallery adjoining the library, which is the ancient refectory of the Priory. During the removal of the obstructive buildings, the last finishing touches are being given to the exterior of the pavilion that forms the *cage*, as it is termed by French architects, which encloses the principal staircase. Upon the interior of this structure architectural ornament is being lavished with unsparing hand, the decorations having now been nearly four years in progress, and they are not yet completed.

During the present series of alterations and additions, restorations also are taking place. The apse of the ancient church of the Priory, a portion of the original building still remaining, and which belongs to the architecture of the eleventh century, is undergoing thorough repair and restoration, as are a portion of the ancient embattled walls, and one of the mural turrets.

From the mass of modern buildings which occupy a great portion of the ancient quadrangle of the monastic building, a vast and lofty chimney has been rapidly rising, the daily progress of which has raised the curiosity of the neighbourhood. Some hinted at the secret structure of vast furnaces, in which iron ore, procured from England at the reduced duties of the new commercial treaty, was to be smelted for the private use of the government, or of some influential official, and many other explanations, equally extravagant, of the object of the great chimney, were current in the *cafés* of the Rue St. Martin. The structure in question is, however, nothing more than a ventilator for the lecture rooms, on the principle recently adopted, and found so effectual, in the *Nouveau Cirque*, and in the *Théâtre Lyrique*.

Speaking of theatres, I may mention that the façade of the new theatre in the Rue du Caire is just completed, the theatre being intended to replace the old Gaîté. I do not admire the architectural design sufficiently to tempt me to give you a detailed description of its leading features, though the design has yet a certain character that is not without its promptings and suggestings to a careful student, who is determined to learn something, even from an inferior model.

In other parts of Paris, works of various kinds are going on, the present government being always on the look out for means of employment to the teeming and restless population of the Faubourg St. Antoine, and other quarters, where it is deemed that want of employment is generally the precursor of political agitation. It is true that there is not another Rue du Rivoli to finish, nor, precisely, another Boulevard Sebastopol in process of creation, nor yet another Louvre, employing its thousands in a grand work of completion; but architectural works of more or less importance are nevertheless going on. On one side active destruction of the old is rife, to make room for the new, or the other fresh structures are as rapidly rising.

The destruction of old buildings in the more crowded parts of Paris, and the erection of superior and more spacious houses in their place, is not only a great improvement, architecturally speaking, but will tend greatly to render the sanitary state of the great city more satisfactory; yet the removal of the more humble dwellings to make room for comparative palaces, is raising just such an outcry in Paris, as that created in London by improvements of a similar character. Where is the working population to go? Where are the small masters to find houses or lodgings, if you use up all the ground for dwellings only suited to the wealthy?

The last stones of the Pont de Louis Philippe are being torn from their concrete foundation, where one might have thought them safely embedded for, at all events, some generations to come, and in a few weeks not a vestige will remain of a structure that was meant to be a dynastic monument, as well as a public convenience. Close at hand, a new stone bridge has suddenly arisen; which is just receiving its completing features, in the form of the handsome *accouodoir*, which is now being placed above the handsome balustrade; while, not far distant, a new iron bridge has shot across the Seine, to afford almost superfluous convenience to a certain small section of the population of Paris.

The eastern point of the island of Notre Dame is the site selected for the new *morque*, the foundations of which, below the bed of the river, have been, after much labour, made solid and secure. The works have been carried on within a vast coffer-dam as for the piers of a bridge, the first stones being laid upon a flooring of enormous tiles. With a greater expanse of water surrounding the works, one might have fancied that the foundation of a Venetian palace was being laid in the treacherous sands of the Laguna. Notwithstanding the occurrence of many difficulties, the foundations are now safely completed, and the walls of the new *morque* have risen to about the level of the river; the works being evidently destined to proceed with rapidity. I have not seen the design; but it will, in all probability, be highly characteristic, as the subject is one which comes peculiarly within that scope which French genius generally treats in an effective manner.

Preparations for another new Boulevard are proceeding energetically to the south of the Hôpital des Invalides, which, though not planned upon the same scale of magnificence as those which prepared the way for the street palaces of the Boulevard Sebastopol, are yet destined to give rise to building operations of a very important class; for the development of suitable sites will doubtless lead to the erection of residences of superior character in this quarter of Paris, which has, as yet, remained tolerably free from modern innovation on an extensive scale. These, with the continued development of ordinary street architecture, in more and more elaborate forms, afford plenty of food for observation to a travelling architect. In every thoroughfare of importance that has not been already rebuilt within

the last ten or twelve years, the crash of old houses in process of demolition is heard; and the bustle attending the erection of new and more splendid structures, intended to fill their places, is everywhere going on. The architectural profession must be in a thriving condition, and the building trade a good one in the Paris of to-day.

The architectural drawings in the foreign department of fine arts in the International Exhibition, of which I observed a very instructive account in the BUILDING NEWS a fortnight since, will serve to give the English public some notion of the tendencies of modern architecture on the Continent; but the display is scanty, and many of the most eminent French architects of the day are not represented at all. I propose, therefore, on a future occasion to attempt a description of some of the more striking architectural works which have been completed within the last few years in Paris and other continental cities.

A HOUSE FOR THE SUBURBS.*

WITHOUT aspiring to the especial attention of architects, the second edition of this work, which differs widely from the first, takes a position not previously occupied, and affords in a popular way a large amount of information. An architect acquainted with the current desiderata of house building, and mingling in suburban society, is just the man to throw out some useful hints, unclogged by the formality that often repulses the non-professional. The subject, says Mr. Morris, "has not appeared to demand extreme precision, but to admit of adequate representation by the characterising lines, articulating dots, and supporting touches of a sketch, rather than to call for the elaboration of a picture."

A glance at the transitional state of the metropolis accounts for the daily migration of Londoners and the growth of populous environs, while the characteristics of soil, climate, and scenery are noticed with reference to the selection of proper localities. "Nothing," it is said, "can be more conducive to the architect's success than a well chosen position for his work, and no part of his duty more urgently demands his careful study, though it not unfrequently happens that all choice on the subject is precluded by some step taken under the erroneous impression that nothing but the building would have any interest for him, and in utter unconsciousness of the artistic advantages pertaining to one spot over another."

The economy of space is touched upon and exemplified by the treatment of a plot containing half an acre at Wimbledon Park. As to price, upon which some information is also given, it ranges from £50 an acre at the extremes of the home counties to something like a million in the heart of the city! "An enormous realisation is therefore open to the Bank of England, whenever it may think fit to consolidate its straggling offices into a grand convenient edifice, and appropriate the superfluous part of the site to a new Stock Exchange and other monetary establishments, with a dividing thoroughfare from Threadneedle Street to Lothbury."

As to the consideration of plans adapted to the immediate purposes and habits of the present day. "No architectural quality of a dwelling conduces so extensively to the satisfaction and comfort of its occupants as a well contrived plan, and nothing is more inconvenient in result than ill considered or misconceived arrangements. I have been painfully conscious of this in making some alterations to an ancestral edifice, where the whole arrangement is left handed, the best and warmer aspects being occupied by offices and stables, while the family rooms are confined to the biting north and east, a defect that can only be alleviated at considerable cost and never entirely overcome."

We are shown a pair of semi-detached houses, which Mr. Morris defends against the imputation of Cockneyism.

Next there is a square-looking Italian house with conservatory erected near Blackheath, on a site containing only a quarter of an acre. These are on the "compact" plan, with offices in the basement; but the next in order, the

"Glebe house" (see illustration), has the offices extended on the ground level as is usual in the country. Mr. Morris gives some particulars of parsonages built in various parts of England, "but it is necessary to say that as the conditions and interests of clerical incumbency differ from those of ordinary proprietorship, the parsonage scarcely offers to the skill of the architect that full opportunity for contrasting effect with cost, which is so welcome under freer circumstances, and so rapid is the transition of architectural sentiment, that it would be unfair to speak of almost any houses, though but a few years old, in any other respect than as grounds of experience and criterions of expense."

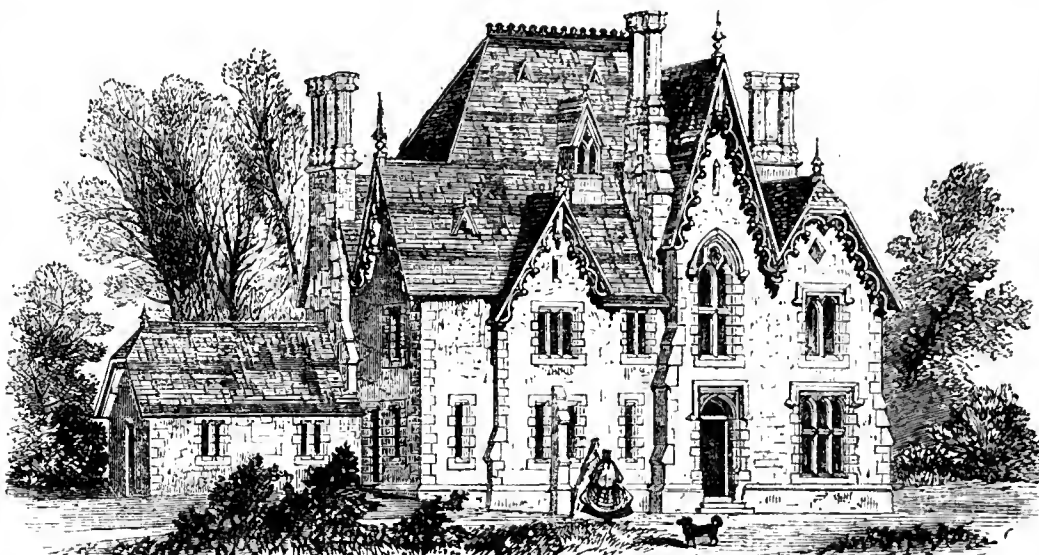
These minor examples in the book have few or no outbuildings, but the principal design has all the offices required in a complete establishment of moderate extent, including the laundry court, the stable-yard, and the conservatory. The description or discussion of this plan affords occasion for remarks upon style, construction, materials, and cost, enabling the author to scatter with a liberal hand hints and suggestions in favour of elegance, health, and general convenience.

MR. ASHPITEL ON ARCHITECTURAL DRAWINGS AT WINDSOR CASTLE.*

(Concluded from our last.)

AMONG the sketches of Muzio Oddi is one entitled "Façade of the Sanctuary towards the Church." We have no clue to the period, but might infer it was made after his liberation. A rough sketch (p. 21) is given of a tablet to the memory of his father. The inscription is "D. O. M. to Captain Lactantius

Oddi, who when alive was strenuous and upright under every fortune. Mutius and Matteo placed this as an act of piety to their father." Many of the drawings which now follow are more neatly executed, and many have dimensions figured on them, which would lead one to suppose they had actually been executed. They are not only for churches, campanile, and other large constructions, but even for organ cases, brackets, and other ornaments,



and one seems a design for a picture-frame. A large number of them are for doorways, entrance gates, and large windows, and, I think, we must agree, display much ingenuity and boldness of handling.

The second volume commences with plans which seem to have been parts of conventual buildings. Among them is a very curious sketch of the inside of a dome looking upwards, and showing a construction of scaffolding, cords, &c., probably intended, as appears by a section at page 22, to enable the builders to fix the tambour at the top. At page 19, we have an elaborate plan of a large palace, fortified at each angle with a bastion with embrasure for twelve guns each. It in some degree resembles Caprarola in arrangement; but the latter is a polygon in plan, while this is square. This is followed by the plans of the *enceinte* of a large town strongly fortified, with the sections, or, to use the expression of the old engineers, "profiles," of the ramparts. Unfortunately there is no description by which it may be identified. We have three plans, &c., for conventual buildings, one of which is endorsed "A monastery for the nuns of Ancona," and shows our author continued his avocations as an architect even while occupied in military pursuits. We then have the plan of a large amphitheatre, on the back of which are some curious moral reflections on beauty and love. One of them is headed by a reflection, expressed no doubt many thousand times before and since his time, "Amore tiranno." Whether the remembrance of the Grand Duchess gave birth to this expression, we know not. We then have the design for a large window, which, from the inscription, we may suppose to have been put up at Milan in the duomo. Under this, it appears, an altar was intended to stand, which he says was to be conformable to the Altar of St. Joseph. The whole is of marble, and seems of very large size. It would be tedious minutely to describe every item before us. Suffice it to say, we have designs for a chapel, on the back of one of which is written, "Plans of the Chapel of the Pope in the Church of

* A House for the Suburbs, Socially and Architecturally Sketched. By Thomas Morris, M.I.B.A. With illustrative designs. Second Edition. London: Simpkin, Marshall, & Co.

* Paper read by Mr. Ashpitel before the Royal Institute of British Architects.

Minerva," probably Santa Maria Sopra Minerva at Rome; and others for the sacristy at Loretto.

We now get to the designs for fortifying the town of Lucca. Some are marked the "Idea of George Settale, of Milan," while his own is modestly inscribed, "The idea of another without a name," *innominato*. With these are detail drawings of bastions, one with rounded, and the other with square orillons; there are also stairs apparently leading to casemates, or magazines, or other places of safety. We then have a plan of the city and citadel of Casale, on which is sketched in red chalk the approaches of the enemy, and some rough outworks, which seem to infer that he was present and took part in the operations. The mixture of military and civil architecture which follows, shows that Oddi still combined the pursuit of arts and arms; but it would weary you to describe them all. I would, however, call your attention to a very ingenious contrivance for raising and lowering a drawbridge, where the increased weight due to the increased leverage as the bridge descends is compensated by a very clever contrivance, much on the principle of the fusee of a watch. To judge of his abilities in a military point of view, by the knowledge of the present day, would be absurd. The increased power of ordnance, particularly of the mortar and shell, have entirely altered siege operations from the time of Muzio Oddi. He seems to have used both the flat bastion, such as those with which San Michele fortified Verona, and the bastion with a larger capital and sharper angles of Vauban and Cohorn. But he appears to have taken especial pains with his orillons. In his time, cities were often taken by storm, as soon as any breach could be effected, and very often merely by escalade, by coup-de-main. In this case it was very important to be able to get guns to sweep the face of the curtain, and equally important those guns should not be exposed to a cross fire. San Michele put one under another in the orillons, but of course, like all casemated guns, they were annoyed by their own smoke. Oddi placed his side by side. If, however, we judge of his abilities from the honours paid him, and the testimony of his biographers, he must have been a great military architect.

The next volume to which I shall beg to call your attention, is one wholly devoted to the church of St. John Lateran at Rome. This noble building has a façade nearly forty feet wider and thirty feet higher than our St. Paul's, and is nearly eighty feet wider between the clear of the walls of the nave. The old Basilica was destroyed by fire about the year 1350, and was restored by a long succession of Popes, and completed as to its interior by Clement XI., about the close of the seventeenth century. The volume contains a number of plans and sections of the building, boldly and almost roughly executed in pen and ink; these show the present state of the church. It formerly consisted of five aisles, divided simply by immense Corinthian columns, from the capitals of which arches sprang in the old Basilican style. As modern requirements demanded a great number of altars, large piers were constructed, with niches, &c., fitted for that purpose. A great many of the old columns, which had escaped the fire, are said to have been built into these piers. It has, therefore, entirely lost its ancient Basilican character. The whole edifice is enriched with the finest marbles, mosaics, gildings; it is full of noble statues and fine monuments, and is, in fact, second in richness only to that of St. Peter. The book before us is well worthy of inspection, not only to those who have seen the building, but to those who have not. The latter half of the volume is occupied by a most curious subject. It contains drawings for all the ceremonies of a Council of the Church. This, of course, would not be an œcumenical or general council, the last of which, as is well known, was that of Trent, nearly three centuries and a half ago. It is probably a smaller council or conclave. The principal feature in these decorations is an immense tabernacle called a catafalco, which stands over the high altar, and is very richly decorated. It seems to have been surrounded by bas-reliefs, showing the procession and the other ceremonies, the bishops and other dignitaries; some are walking, some sitting at a table, some kneeling at an altar, while behind a sort of screen stand skeletons, which seem watching and mocking their pomp and state. There are plans of the arrangements of the seats, and even of the hangings to adorn the church; and drawings of all necessities, down to the chalice and candlesticks. The benches and chairs are also drawn; one is said to be "for the Pope, made," it tells, "of red brocade, and damasked velvet, with two footstools to match." Another, more curiously, is marked, "Seat of straw, with two cushions of silk;" all have figured dimensions. This volume is probably by Carlo Fontana, as the arms of Clement XI. appear in several places. This prelate came to the papacy in 1700, both Borromini and Bernini then being dead.

The last volume, to which I venture to invite your attention (at least the greater part of it) is superior in artistic execution, and the subjects are of greater interest than those I have already alluded to; although there are others at Windsor possessing still greater claims to your admiration. The volume commences with some extremely well-executed sketches of Roman remains, very carefully outlined and shaded with bistre. They consist of the Arches of Constantine, Septimius Severus, the Goldsmiths, of Lucius Verus, the Porta Maggiore, the Arches of Titus, the remains in the Roman Forum, of that of Nerva, the Baths of Paulus Emilius, the Theatre of Marcellus, the Temples of Fortuna Virilis, Antoninus, &c., the Septizonium, the Pyramid of Caius Cestius, &c. They are very faithfully rendered, and possess the unusual interest of giving some examples which are now destroyed or removed. Thus, the Temple of Pallas, in the Forum Transitorium, was taken down by Paul the Fifth, and the columns now form part of the magnificent fountain called the Acqua Paola. The Arch of Lucius Verus has disappeared. The Septizonium of Septimius Severus has also perished, and nothing is left of it but a heap of old bricks. At first, I thought the drawings were the originals of those given in Gamucci's Rome, but though

they resemble them somewhat in character, all differ more or less, while the larger part differ in toto. One curious circumstance arose during the research, and that led to the inference that they are older than his book, which was printed in 1565. The Arch of Septimius Severus in the latter work shows an excavation round the lower part, by which the pedestals are exposed to view, as they are at present, while in the Windsor MSS. they are drawn as still covered up with the earth.

An examination of Rossi, Sadeler, Du Perac, Defrairius, Gamucci, in fact, of all the authors on the subject to which access could be had in the very limited time I had to prepare this paper, proved these drawings were no part of their works. I therefore took the volume up to the British Museum, the kindness, attention, and courtesy of whose officers on repeated occasions I am proud to acknowledge. Mr. Carpenter, Mr. Rye, and Mr. Bond gave a very long and patient investigation of the subject. The former gentleman said immediately that he thought they strongly resembled the drawings of Jacopo Tatti, whom we know better as the great Sansovino of Venice. Unfortunately the Museum possesses but one drawing from this architect's hands. On comparing it with those before us, there certainly was a very great similarity; the colouring was hardly so warm as these, but that might have been quite an accidental circumstance. The latter gentleman, whom I venture to name, and who, in judgement of the identity and period of handwriting may be considered "facile princeps," also thought the inscriptions as both extremely like. With but one drawing from which to judge, however, it would be much too hasty to pronounce a decided opinion. We all thought, however, we might go so far as to say there is great probability that these drawings are the work of Sansovino, and if that be correct, of course they are of the greatest interest and value.

The remaining drawings in the volume are by different hands, some being very well executed, and some evidently copies of good drawings by inferior hands. In one or two of them the blunders in the perspective are such as none but an inexperienced person could make. On one drawing there is the name of Vignola, but it is not likely it is his. On another is the more likely inscription in Latin, "from the books of Julian Giamberti called San Gallo;" and the drawing may thus be said, either to be by that celebrated architect, or to have been collected by him. The subjects are all Roman antiquities. No. 17 is the so-called Portico of Octavia, in the Peschiera, which is drawn as nearly entire, and the restoration of which differs very little from that of Canina. It is now in a very dilapidated state. Several others may be recognised, as the arch at Verona, and those of Titus, and Constantine, the Baths of Paulus Emilius, &c.; but it is exceedingly tantalising to see several very curious buildings to which we have no clue, and which we suppose must have disappeared. At the end of the volume are a number of plans which seem to suit some of the drawings, and if so, the inscription, "one mile out of Rome," "two miles from Rome," &c., would lead us to think they are parts of the villas, tombs, or temples which some time lined all the roads from Rome, and now are mere heaps of ruin, and having served as quarries for ages to every one who wanted building materials, are now mere heaps of rubbish. The beautiful statues, the sculptured friezes, the marble columns that adorned these buildings, have long ago been burned into lime to fertilise the land; such of the other materials as could be moved have formed wretched farm-houses or enclosures to keep the sheep and goats from the nightly incursions of the wolf. Nothing now remains but such masses of brickwork as are too hard, too rock-like, to be worth the labour of plunder, and which stand up among the vast plains of the Campagna as ghostly relics of past grandeur.

This paper was begun with saddened feelings, and seems to conclude in the same spirit. It is natural it should be so. It might be thought fitting to make further allusion to the great personage who has departed. I cannot but feel that such a course would necessarily revive painful feelings, and that it would be out of place for me to attempt to pronounce anything like panegyric. One thing may be permitted, however, which offers, in some degree, a more cheering retrospect; and that is, that one of the last things the Prince asked for from the library related to these MSS.; and one of his latest wishes was that an opportunity of exhibiting them should be afforded to a body he always held in regard—the Royal Institute of British architects.

The CHAIRMAN said, they had heard from Mr. Ashpitel most interesting remarks; the documents referred to were of vast importance, and, in every sense of the word, deserved the most minute investigation.

Mr. WOODWARD, the Royal Librarian, of Windsor Castle (having been called upon by the Chairman), said he had not the power of adding to the information communicated by Mr. Ashpitel, as his time had been taken up in the arrangement of other portions of the library; but it had afforded him much pleasure to accompany the drawings which were that evening exhibited, and which it was the anxious wish of the late Prince Consort the members of the Royal Institute of British Architects should investigate.

Mr. CARPENTER (of the British Museum) suspected that the earliest drawings exhibited, were by Baldassari Peruzzi, and collected by Serlio.

Mr. WOODWARD said he had hitherto been unable to obtain any satisfactory history of the drawings referred to by the lecturer, but Sir Charles Phipps had promised to allow him to examine the Privy Purse Accounts, which might throw some light on the subject.

Professor DONALDSON said that the great difficulty was to distinguish the individuality of the drawings referred to by Mr. Ashpitel, there being such a similarity in the Italian inscriptions. One of the volumes exhibited that evening from the Royal Library was very precious, because it contained a great number of the monuments we knew, as well as many which had disappeared, and of which we had no records.

In answer to a question from the CHAIRMAN, Mr. ASHPITEL said he had seen and examined the whole of the thirty-eight volumes to which he had referred; and the four which were brought to the Institute were not brought there because they were the most interesting of the collection.

Mr. WOODWARD thought it best to have the four volumes brought first, as he was responsible for the safety of the whole. He had commenced photographing all the most important drawings in the library at Windsor; and if those which had been exhibited that evening should be thought worthy of circulation in that form to the architectural world, he should be extremely happy to take them at an earlier period than he otherwise would have done.

The CHAIRMAN hoped to see Mr. Woodward some other evening, with two or three more volumes of the collection.

Mr. WOODWARD: Most assuredly I shall do so, with much pleasure.

The CHAIRMAN proposed grateful thanks to Her Majesty the Queen, for her permission to exhibit the books shown that evening; thanks to Mr. Woodward, the Royal Librarian at Windsor; and thanks to Mr. Ashpitel, for his extremely amusing and highly interesting lecture.—Carried by acclamation.

Mr. ASHPITEL moved a vote of thanks to Mr. Panizzi, the chief librarian, and the other officers of the British Museum, for their uniform kind and courteous treatment to architects.—Mr. WYATT PARWORTH seconded the motion.—Carried unanimously.

New Member.—Mr. E. Welby Pugin, of Buckingham Street, Adelphi, was elected a Fellow.

The meeting then broke up.

THE TURKISH BATHS, WESTMINSTER.

SINCE the year 1856, when we were told that Englishmen never knew what it was to experience the luxury of a really good bath, there have been several buildings erected, principally in Ireland, to extend the benefits of that great sanitary institution, known by the name of the Turkish Bath. The movement is mainly due to Dr. Baxter, of St. Anne's Hill, Blarney, Cork, by whom it was first practically introduced into the United Kingdom. The Oriental Baths in Victoria Street, Westminster, owe their origin to a number of Irish gentlemen, who formed themselves into a company under the Limited Liability Act; and no better proof can be had of their hearty spirit in the work, than in the fact that they have spent over £25,000 upon its construction.

This handsome building occupies an area of 15,000 sq. ft. with a frontage of 150 ft. The principal entrance consists of a segmental portico of the Corinthian order, and leads to the alcove or office hall, where the tickets to the gentlemen's baths are issued. The main hall stands beneath a dome 30 ft. in diameter, placed at an elevation of 74 ft. In the centre of this hall, which has, from its rich stuccowork, a very effective appearance, a large fountain is erected, in purely Oriental style, around which is placed an octagonal metal stand for the reception of flowers. The floor of this hall is paved with marble, and leads to the principal staircase, which is executed in terra cotta, beautifully embossed. At the middle landing of the staircase, are the apartments of the governors, which command an extensive view of the interior of the building. The second flight at the gallery is supported by handsome scagliola Corinthian columns, the capitals and bases of which are also modelled in terra cotta. This gallery conducts to the several divans of the first-class gentlemen's baths, commodiously and elegantly furnished with ottomans and lounges. These rooms measure 40 ft. by 36 ft., and are divided into compartments by a colonnade of scagliola pillars. A handsome iron staircase leads to the attics, which comprise private dressing-stall saloons, each measuring 40 ft. by 24 ft., which are comfortably fitted up with separate dressing-places. Between these two saloons will be found a large refreshment-room. The ceilings of the beautiful hot rooms are lighted and decorated by means of stained-glass stars of different sizes in primitive colours. The ornamental stucco and terra cotta work in these apartments is very elaborate and effective; the centre screens, diaper walls, and arches leading to the fountain or "douching-rooms" are all finished in the terra cotta which is so abundant throughout the building. The couches and floors are composed of Carrara marble and Minton's pavement, the rooms being so arranged as to accommodate public or private bathers. Descending farther from these chambers by the main staircase to the hall, will be found more spacious divans and hot rooms; the ceilings of the latter are composed of groined arches; and light is obtained through the coloured-glass windows in the gable walls.

It will be almost needless to add, after the above description, that the accommodation given to the bathers is everything that can be desired. The lavatories are elegantly ornamented with marble fountains, and contain materials for "douches" of any required temperature. The ladies' baths are situated at the left-hand side, the entrance being through a side door in the main front, which, however, is distinct from the main porch. A small door at the right-hand entrance of the building leads to a novel acquisition in the shape of horse baths. There are also laundries, drying-rooms, water-works, and basement stories, which contain furnace chambers, coal and coke stores, and the attendants' rooms. We perceive there are additions being made to the back of the building; and the tasteful, yet neat, iron railings in front have only recently been laid down.

ST. SEPULCHRE'S CHURCH, NORTHAMPTON.

THE Church of the Holy Sepulchre at Northampton, built in the time of the Crusaders, has recently been restored under the direction of G. G.

Scott, Esq., R.A. This church is one of the four remaining round churches in this country. The whole of the external restoration has been completed, but the want of funds prevents the committee from proceeding with the internal fittings.

The church consists of the original Norman Round Church, founded about A.D. 1090, the Norman chancel having many centuries ago disappeared, and been substituted by an early decorated chancel with two aisles. This portion having fallen into a dilapidated state, and been much mutilated by successive alterations, and the Round being no longer suitable or large enough for the populous parish to which the church gives its name, it was determined that the chancel should, with its aisles, be extended eastward; and discoveries made during excavations show that it now occupies its original site; the late chancel and its aisles thus becoming the nave for the use of the congregation, together with an additional aisle on the north side destroyed in very ancient times, now rebuilt upon the old foundations, by funds raised by a committee of ladies of the county and town of Northampton. This has, after many years' anxious labour on the part of those interested in the work, been so far carried out, that the flooring and fittings now only remain to be executed.

The new portions are constructed of the red sandstone which is found in the county, the dressings being of red and Bath stone varied. The three chancel windows have detached shafts of red and green serpentine, with richly-carved caps, and the pillars of the chancel arches have also polished granite and Anglesen marble shafts. The apse and chancel will be paved with encaustic tiles, the designs for which have been drawn by the Rev. Lord Alwyne Compton, a nobleman who has taken a very active interest in the restoration. The roof of the apse is constructed of oak, pine, and mahogany, in rich ornamental patterns, Mr. John Watkins, of Northampton, being the contractor for this portion. The carving, the cost of which is provided for by special donations, is being executed by Mr. Farmer, of London. The Round part will, as soon as the restored portion is completed, be cleared of its pews and galleries, and its restoration conducted by a committee of friends of the late Marquis of Northampton, the late President of the Royal Society, as a memorial to him, when it will be preserved as a vestibule or baptistery.

In the early part of the spring, Mdm. Lind-Goldschmidt gave her valuable services to sing at an oratorio for the benefit of this church, which realised £490 net profit. The total cost is estimated at about £6,000, of which we understand £1,500 remains to be raised.

ON THE FORMATION OF A NATIONAL MUSEUM OF ARCHITECTURE, VIEWED IN CONNECTION WITH ITS BEARINGS UPON MEDIEVAL ART.*

(Concluded from page 436.)

IN illustrating Architecture through the medium of a Museum, I should lay down as a primary and fundamental rule, that it must, mainly, and on strict principle be effected by *representation*, rather than by collecting the actual works of art themselves. There are exceptions to this, but in case of each of such exceptions the onus lies upon the collector of proving the propriety and lawfulness of his departure from the rule, and of clearing himself of the charge of encouraging spoliation. Architectural objects belong to their own sites, and even where severed from their actual position in the building of which they formed parts, they ought, as a rule, to be preserved, either on its site or in its vicinity, that their local associations may not be lost.

I call special attention to this, because I fear that a feeling exists in the minds of those who direct our national collections that plaster casts are worthless and contemptible objects, and are almost unworthy of admission; whereas, on the contrary, it is the actual objects of art that demand apology, and I will boldly say that any actual architectural objects in our own Museum I would gladly see returned to more local habitations, if such can be shown to exist; and at the risk of being pronounced a barbarian by the curators of the British Museum, I would almost go so far as to say, that I should feel a satisfaction in learning that the Elgin Marbles were to be restored to their places in the Parthenon, and that our great Museum should be content with casts of those glorious master-pieces of art (though, perhaps, made in some material more durable than plaster).

I will roughly classify the objects to be illustrated as follows:—

I. *Actual Architecture*, by which I specially mean stonework, whether in the form of mouldings, or other mechanically formed details, or of architectural carving.

II. *Sculpture*, forming a part of or intended expressly as an accompaniment of architecture.

III. *Woodwork*, forming a part of or connected with architecture.

IV. *Metal work* belonging to architecture.

V. *Architectural decorations*, whether inlaying, mosaic work, painting, or other cognate form of art.

V. *Painted glass*.

VII. *Pavements*, whether of tile, mosaic-work, or otherwise.

VIII. *Monumental slabs*, whether as brasses, incised, sculptured, or inlaid stones.

IX. *Miscellaneous objects*. Each of these classes includes all its chronological and national varieties.

On the first class (*Actual Architecture*), I will first remark that it is not,

* Paper read by Mr. GEORGE GILBERT SCOTT, R.A., at the Architectural Museum, South Kensington.

as a general rule, necessary to go very far in illustrating its more mechanical forms, such as mouldings, &c., though a collection of them belonging to buildings of different dates would be highly useful. Generally, however, the architect may study these sufficiently from the actual buildings, and their sections can more accurately be represented on paper than in plaster. It is, however, of the utmost importance to obtain casts of them wherever they come in contact with sculpture or foliage, and where they are enriched in any degree by carving. Thus, where a cast is made of a capital, the abacus, a portion of the shaft, and perhaps a short length of the arch mouldings which it sustains, should in many cases be cast with it, so as to illustrate it *as a whole*, and that the art-workman or student may see the carved work in connection with its natural accompaniments. Again, where certain orders or parts of arch mouldings are enriched with carving or sculpture, those not so enriched should be represented with them, that the grouping of the whole should be represented, and the mutual influence of the plainer and more ornate parts one upon another may be illustrated.

I have thought it necessary to premise with what is properly only a matter of detail, by way of limiting the vastness of the field which is open to us; for, so endless is the variety of our style and the richness of its resources, that a collection which would worthily illustrate it would occupy a somewhat inconveniently large space. In forming, however, an architectural museum on a scale worthy of being called *national*, great space is an absolute necessity, and it is of little use to make the attempt without boldly facing this primary fact.

It is known only to those who have for years been in the habit of visiting and diligently studying and sketching from ancient buildings, what an inexhaustible fund of exquisite and ever-varying art we have to draw from, though it is not by any means easy to obtain the specimens most needed. It is, in fact, in many cases only through the intervention of the architects engaged in the repairs, and only when repairs are going on and scaffoldings erected, that the most valuable works in our great buildings can be reached, while in buildings of a humble class it is architects alone who know where such works of art are to be met with.

One great distinction between a national museum, for which considerable funds could be procured, and a private one, like our own, is, that *much larger* objects can be obtained. It is often most desirable to possess casts of entire doorways, or their sculptured tympana, tombs, reredoses, &c., so as to show the work as a whole, instead of in a number of small and disjointed portions. A private society like our own can very rarely do this, but in a museum supported by public funds it would readily become practicable, indeed the largest of such objects would not perhaps cost more than is sometimes expended on a single specimen of majolica.

It is not, however, our own architecture alone which must be illustrated. The contemporary art of other countries has equal demands upon us; nay, in one sense, greater, inasmuch as if our art workmen find it difficult to visit our own architectural monuments, they will find it *impossible* to visit those of foreign countries.

The Gothic architecture of France is the elder sister of our own; and, if not more beautiful, possesses beauties and varied expressions of its own which must ever seem to it the earnest love and devoted admiration of every student of mediæval art. Our own architecture can hardly be correctly understood without a knowledge of that of France. Their origin, development, and history, are so linked and entwined together, that without the knowledge of both, they cannot be fairly studied or appreciated. France, too, took the first place in art, as in arms, amongst the nations of mediæval Europe. Her art productions may, therefore, be viewed as the *normal types* of Gothic architecture, and, as such, they claim a full illustration in a museum of the architecture of those periods, and there is a boldness and nobility of treatment about them which especially commend them to the most diligent study of the architectural student and workman.

French architecture must therefore, in such a museum, be illustrated as fully and as voluminously as our own, nor can I conceive of any field of illustration so glorious or so eminently useful as this.

The mediæval architecture of Germany and of Italy have claims only second to those of France. Indeed, time would fail, to enumerate in the roughest manner the glorious works which should find place in such a museum. They must illustrate each element of architectural ornamentation and detail throughout its chronological course, and through the several countries where our architecture prevailed; giving, however, a due preponderance to the best periods, the best examples, and the countries where the art possessed the finest characteristics.

The period claiming the greatest amount of illustration, at least in northern Europe, may be roughly said to embrace two centuries, viz., the great thirteenth, and a moiety of the preceding and succeeding centuries—that is to say, A.D. 1150 to 1350. Earlier and later periods must be fairly represented, but this interval contains the real vigour, the pith and marrow of mediæval art. Mediæval architecture demands, however, for its elucidation, that certain styles which preceded it—and from which it drew its first inspiration—should also be duly illustrated. I refer to the Byzantine and the Italian Romanesque; each including the branches by which it was led through other countries, and especially through Germany and France, with the changes it underwent by the way. I have taken some pains, in my lectures delivered at the Royal Academy, in 1858, to show how direct was the influence of Byzantine art upon the architecture of France in the twelfth century. The foliage and the figure carving, so well known in the earliest French pointed works of the latter half of that century, are, for the most part, directly derived from Byzantine carving and drawing, with a certain degree of influence from Italy, which was her-

self drawing freely upon Byzantine art. It is clear, therefore, that to illustrate mediæval architecture properly, we must possess ample specimens of these, its parent styles.

The classification of specimens may be divided into those which are elementary, and those which are in a less and in a greater degree combined into complete and applied architectural features. Thus, we must illustrate in its more abstract form the history and progress of architectural foliated ornamentation; showing how it had taken, during the darker ages, that strange form which is sometimes designated as Runic (though whence derived it is difficult to say); how this was long used side by side with foliage derived from debased classic remains; how a distinctly Byzantine tone was imported into the art during the twelfth century, both in France and Germany; how this, in process of time, developed itself into a new and original style of foliage, such as we find in France, England, and Germany, in the earlier years of the thirteenth century; the noblest and the most perfect conventional and architectonic ornamentation which has, perhaps, ever been generated; how, by working this gradually up towards nature, the artists at length fell back implicitly upon nature herself; first using natural foliage of the most exquisite kind imaginable, side by side with the architectonic, and at length to its exclusion; and how, at length, a new and inferior conventionalism supplanted it—a conventionalism of *departure from*, as the other had been one of *approach to*, nature.

In the same manner we must illustrate the accompanying progress in animal and figure sculpture: how the barbarism of the northern nations during the dark ages became gradually enlightened by an infusion of Byzantine art; how this art gradually softened down its rigid severity, and gave way to the noble sculpture of the thirteenth century,—imperfect in academic correctness, but full of noble sentiment and of high aspirations after artistic perfections,—unhappily not at that time fully realised, but which it is *our place*—would that it may be *our lot*—to carry forward to its legitimate results.

Then we must illustrate the history and use of these as applied to architectural features: we must show the historical progress of foliated capitals, in itself a wide subject of historical and artistic enquiry, and of study for our own actual use and instruction. We must, in the same way, show the history of foliated enrichments in mouldings, arches, cornices, and all architectural details to which it is applied; the development and changes in *surface-ornament* of all kinds, and of the union with all these of representations of animal and human life. Then, we must, in larger specimens, show these elementary details combined into greater architectural compositions, and united more directly with figure sculpture. To do this we want, as I have already stated, complete casts of entire doorways, or, where impracticably large, of portions of their arches, of (perhaps) their entire jambs, and their sculptured tympana, casts of celebrated tombs, of pulpits, of fonts, &c. Then, again, we want the history of niches and tabernacle work, itself a most fertile subject, and demanding casts often on a magnificent scale; we want the history of crockets, finials, foliated crestings, and a thousand other architectural elements, which it is impossible in such a paper as this to enumerate. The work before us is a truly glorious one, and it only requires to be taken up in a spirit worthy of its claims, to make the result in the highest degree noble and beneficial. I must, however, add one word: that casts alone will not do all which is wanted: they must be accompanied by photographs, and often by measured drawings.

I will only, however, under the head of actual architecture, mention one other class of objects which would demand house-room within its walls. I refer to those melancholy but invaluable relics of ancient art which exist in our ruined abbeys, and to those in other buildings which are in danger of being destroyed by inevitable decay.

It is the *absolute duty* of an Art Department, whether or not they had contemplated an Architectural Museum, to rescue these exquisite and invaluable works from oblivion, by obtaining casts, photographs, and measured drawings, from them while they yet exist. Every winter abrades their ancient carved surfaces, and brings down, perhaps, larger portions of their sculptured foliage. Those who have been for many years in the habit of sketching from old buildings, see at every visit the progress of destruction which is ever going on, and which is ever accelerating its destructive inroads. A few years more of delay, and these precious works of art will have perished. In the name, then, of art, of reason, and of patriotism, let us delay no longer, but at once obtain perfect representations of what we have left, by means of plaster, of photography, and of drawing, and enshrine them as the most precious relics to be for ever preserved in the archives of our national art! I will add here, however, one word of caution: let a hardening process be always applied to the ancient carved work before attempting to make casts of it, or we may destroy the original while obtaining the copy.

II. What I have said of architecture proper, applies equally to the second head—Sculpture forming a part of Architecture. I will therefore view this as included in the foregoing remarks, only adding, that a collection of the mediæval sculpture of the thirteenth and fourteenth centuries, of France, Germany, and Italy, would be an invaluable acquisition to a National Museum, indeed, would be an absolutely necessary portion of it.

III. *Architectural Woodwork*.—This being much scarcer than stone-work, especially that of the best dates, must be collected with great care. Let me, however, be always understood to mean casts, rather than the actual work, though when this has, unhappily, been severed from its proper position, it will promote its conservation to place it in such a museum.

Of woodwork of the fifteenth century, and later, there is a large supply of casts in the hands of the Government, which were prepared

to assist the carvers employed in the Houses of Parliament. This, however, is by no means the best period. We want woodwork of the thirteenth and fourteenth centuries. This is, in England, somewhat scarce, and wherever it exists, casts should be made from it. Among foreign countries, Germany, perhaps, contains the largest store of ancient woodwork. The stalls at Cologne, not only in the cathedral, but in many of the churches; the wonderful doors of St. Mary's of the Capitol; the stalls, &c., at many churches throughout the length and breadth of the country, should find their representatives in such a museum. The elementary classes of woodwork, and the progressive illustration of their histories, would assume a course quite parallel to what I have shadowed out in speaking of stonework, and it is needless to recapitulate them. The objects, however, themselves, and the art expended upon them, differ considerably from the previous class, and the objects are comparatively so scarce, that there is much more difficulty in obtaining them; and it is only by the help of those who are in the constant habit of searching out objects of study in the most out-of-the-way places that they can be found out. Every year, too, they are getting more and more scarce. Even the few early remains of woodwork in our old cathedrals are diminishing, from the carelessness and want of knowledge of their guardians; let no time, then, be lost in searching out and obtaining perfect representations of those which remain, whether at home or abroad.

We now come to the fourth Class;—*Architectural Metal-work.*

If woodwork of the best ages is so scarce, how much more so is metal-work, and how indescribably important is it that we should use our utmost exertions to collect and to preserve representations of it where it would be improper or impracticable to obtain the reality of what yet remains to us! Here, the departments of art are, as regards the smaller and more movable classes of objects, doing very great things for us: indeed, we cannot be too grateful for the splendid collection of specimens of this and kindred branches of art which is being formed within these walls, nor can we be too assiduous in availing ourselves of the facilities for study which are thus afforded us. These, however, can scarcely for the most part be classed under the head of *architectural metal-work*, though they bear very directly upon it; what I refer to is chiefly of a larger description, such as screen-work, hinges, brass fonts, and lecterns, retabula, coronæ, doors, gates, &c., and the other forms of metal-work brought more immediately into contact with architecture. These, like other architectural objects, are chiefly to be represented by casts and drawing, and these should be, from time to time, made from all the best specimens which remain in this country, and all which we can gain access to abroad. We long ago contemplated obtaining a cast from the truly magnificent brass font and its cover at Hildesheim, but our funds forbade it. There are a great number of such fonts, nearly equally worthy of being represented in our museum, as well as innumerable other objects of all kinds and descriptions. Among others I will mention, though a late example, the exquisite brass genealogical tree which clothes the tomb of Mary of Burgundy at Bruges; and this leads me to call attention to the numerous brass effigies and entire monuments which exist, and many of which would be well worthy to be represented in such a collection. I will also call attention to the most magnificent of all classes of metal-work, the gorgeous shrines of the twelfth and thirteenth centuries. There are some invaluable specimens of the same exquisite workmanship in the museums of the department, and it is possible that a few more may by chance be obtained. The greatest and most glorious specimens, however, of this wondrous art, must ever remain where they now are, and where for the most part they have always been; and can there be only rarely visited and studied. What I wish to press upon the attention of the department of art is the necessity of obtaining perfect full-sized representations of these most sumptuous works. Among the many which exist I will call especial attention to those of the three kings at Cologne, of Notre Dame at Aix la Chapelle, and of St. Elizabeth at Marburg. These are *absolute miracles of art*, and I would earnestly press the necessity of perfect full-sized, and perfectly detailed drawings being made from them, accompanied by some more tangible representations of some of their parts.

But I must go on to my next head—*Coloured Architectural Decorations.* Here, again, we have heartily to thank the Department for much which they have done, and to entreat them to go on as they have begun. They have already collected many drawings of such decorations, with some of the originals. Mr. Octavius Hudson, of whose zeal, knowledge, and skill, I cannot speak too highly, has adopted the excellent practice of having casts made from the details of ancient buildings on which he is engaged, and making upon them fac-simile copies of the remains of colouring which he finds. This, if followed out, would supply invaluable illustrations of decorative art, and I would urge the collection of full-sized drawings of all other kinds of decoration wherever they can be procured. Such remnants of old art are continually being destroyed; how easy would it be to perpetuate them by fac-simile drawings. And thus, of all the other classes of art I have enumerated, let us have coloured tracings of stained glass; not only of famous works, but of the fragmentary remains in village churches; let us have (as in fact we already have to a considerable extent) rubbings of brasses and incised stones; coloured rubbings of ornamental pavements, and perfect representations of all other branches of decorative art. I exhibit a fac-simile copy of a part of the ancient retabulum in Westminster Abbey, as an illustration of the kind of drawing I am recommending. Time will not allow me to go further than to say that a Museum thus constituted would be worthy of being called "national," and would not only be the greatest benefit which could be conferred upon our art, but would be no

more than the carrying out to its natural results of what the department have already commenced.

It may be feared by some, that such a collection would encourage slavish copying. My own experience has led to a contrary opinion. I have observed with pleasure that, so far from this being the case, the increased study of ancient examples leads the art-workman to a more enlarged and more reasoning appreciation of his art, gives him greater freedom in the exercise of it, and, above all, leads him to a more zealous and intelligent study of nature. I will only add two more suggestions. 1st. That as such a collection would not be made for a mere spectacle, but for actual use, it should not be deposited in vast and imposing halls and galleries, but should be so subdivided as to give the student every possible facility for quietly studying any one department, which he might be pursuing without the distraction which the enormous multiplicity of the objects would otherwise occasion. In reading a book we should be sadly annoyed if we were obliged to see a number of its pages, or its illustrations, at once; and so it is with a museum; the student only wants to see the part to which his studies are directed. 2nd. I would suggest, as South Kensington is not a place very accessible to the student or the art-workman, that a system be organised of lending out objects to particular districts, in which rooms for the studies of art-workmen shall be opened, and that the specimens so lent shall be changed periodically (perhaps every month), and thus a constant and ever changing course of study facilitated.

I will now conclude by suggesting some points for consideration as to how our great work can be carried on with the greatest possible advantage to the great cause we have in view.

There are two parties to this undertaking. The representatives of the demand and of the supply, and it can only be successfully carried out by their hearty and continued cooperation.

The representatives of the demand are *the architects*. It is not their personal interests in the least degree which are at stake, for buildings would be erected and architects employed and paid just the same, whether the arts subsidiary to architecture are cultivated or neglected; nor can the demand be said to come mainly from the art-workman himself, though it does more nearly affect his personal interests. Those among them whose apprehensions of art have been aroused to activity, join heartily and earnestly in the demand; but, as in the case of religion, those who most need instruction are the least alive to their necessities; and among architects themselves, it is those who most keenly appreciate the nobleness of their art, and have best cultivated it as a *fine art*, who most strongly feel the necessity for aiding the art-workman, on whom depends the realisation of the more artistic portions of their designs. Not only, however, are the architects—and the best among them—the representatives of the demand, but they are also the parties who best—I might almost say, who *alone*—understand what is the nature of that demand; who know, from their daily experience, what are the objects necessary to meet it; and who, from their own travels, their own studies, and from the contact in which their practice places them with ancient buildings, know, also, whence and how those objects are to be supplied. It is, therefore, self-evident, that the aid of the architects most conversant with the subject is essential to the success of the effort; and when we add to this, that those architects have already, by their own individual exertions and of their own free motion and sense of the necessity, most efficiently launched the work and founded an Architectural Museum which must be the nucleus or the model of whatever is effected, the case is rendered still more obvious.

The representatives of the supply are the *Government Department of Art*. To them has been committed that great cause, the promotion of *applied art* in this country.

The Museum of Objects of Art which they are forming, must, of necessity, be of the greatest benefit to this object. It brings within the reach of the manufacturing art-workman the finest objects for his study, such as he could otherwise never have hoped to gain access to. What we ask of them, then, is to aid us and work with us in doing the same for the *architectural art-workman*, who equally needs, and equally deserves, their aid.

If they will not do so, or if in doing so they refuse the aid and advice of those who alone understand what is needed, the world and posterity will know on whose shoulders the onus will lie. If, on the other hand, they appreciate and frankly acknowledge this, perhaps the highest of their duties, they will merit the eternal gratitude of every lover of art; and I am sure that I utter the feelings of my brother architects, when I say that we are prepared to abdicate our self-imposed task in their favour, and to unite with them heart and soul, and without jealousy or rivalry, in carrying out the most noble and most useful work.

The exact regulation under which this united action will be best effected I will not here attempt to define. "Where there is a will, there is a way;" and I content myself with asserting that, on our part, at least, there is a hearty good will, and that I see no difficulty whatever as to the way.

LEVIATHAN ESTABLISHMENT AT SYDNEY.

PROBABLY one of the largest furnishing establishments out of England is that which has recently been erected at the junction of King Street and Castlereagh Street, Sydney. The premises in question comprise, with adjoining timber yards, an area of 42,370 square feet. Thus nearly an acre of ground is occupied for business purposes. On the basement there are extensive timber yards, with saw-pits, turners' shops, show-rooms, and stores for floor-cloth, besides painters' and decorators' workshops,

stables, &c. It is intended to erect large steam saw-mills for the purpose of cutting up the timber used in the manufacture of furniture. The principal show-room is on the ground floor, the entrance to which is from Castlereagh Street, and its length is 265 ft. with an average width of 30 ft. This spacious apartment is filled with every description of cabinet work and upholstery, decorative painting, carpets, pianofortes, chimney-glasses, chandeliers, Gothic church furniture, altar chairs, &c. &c., imported principally from England, France, and Germany. The first-floor is fitted up also as show-rooms, which contain wooden and metallic bedsteads, bedding, and every variety of bedroom and other furniture. Adjacent to the show-rooms are the spacious workshops, in which some sixty hands are constantly employed. Among these are cabinet makers, turners, French polishers, and other artisans occupied in the various branches of furniture manufacturing.

Mr. Lenehan the proprietor, contemplates the erection of a handsome entrance to his show-rooms from King Street, and Messrs. Burnett and Co., of Deptford, have been applied to for an estimate for the construction of a very elegant shop front fitted with their patent iron shutters to protect the plate-glass windows, which are to be formed of sheets 12 ft. by 7 ft.

Notwithstanding the large space at present occupied as show-rooms, these are frequently so crowded with purchasers and lookers-on, that Mr. Lenehan intends to cover in one of the adjoining yards with an iron and glass roof similar to those of some of the railway stations in England. When this shall have been completed, it will form the largest hall in any of the colonies. Its dimensions will be 200 ft. in length, 50 ft. in width, and 30 ft. in height. A gallery, supported by iron columns, will run round the sides and ends of the interior.

ITALIAN SCULPTURE OF THE MIDDLE AGES.*

APPROPRIATELY bound in vellumised white cloth and gold, and admirably printed and illustrated, Mr. Robinson, at the instance of the Science and Art Department of the Committee of Council on Education, has furnished the public with a catalogue of the works of Art at the South Kensington Museum comprised in the section to which the title of the volume refers. Without tracing, as we are almost tempted to trace, the history of sculpture from those early and obscure periods of time, when the imitative faculties of man first prompted him to copy in plastic materials the forms and shapes of animate and inanimate objects around him, we may at once come to the era in which the revival of the glorious art took place in Italy. The word "revival" betokens clearly enough the fact, that sculpture had suffered, from various causes, a declension and decay. This was so indeed with the Fine Arts generally. Efforts had been made, it is true, by Charlemagne and others, to arrest the downward progress of art, but individual efforts, unsupported by the taste or appreciation of the people generally, were not likely to succeed, and they did not. To the monks of the early Greek and Latin Churches is due the fact that art in those ages was kept in existence, and it is some satisfaction to be able to say, that if they purposely obscured the refulgent rays of pure religion with the murky clouds of superstition, they at least fanned the dying embers of the art fire, and thus saved it from extinction.

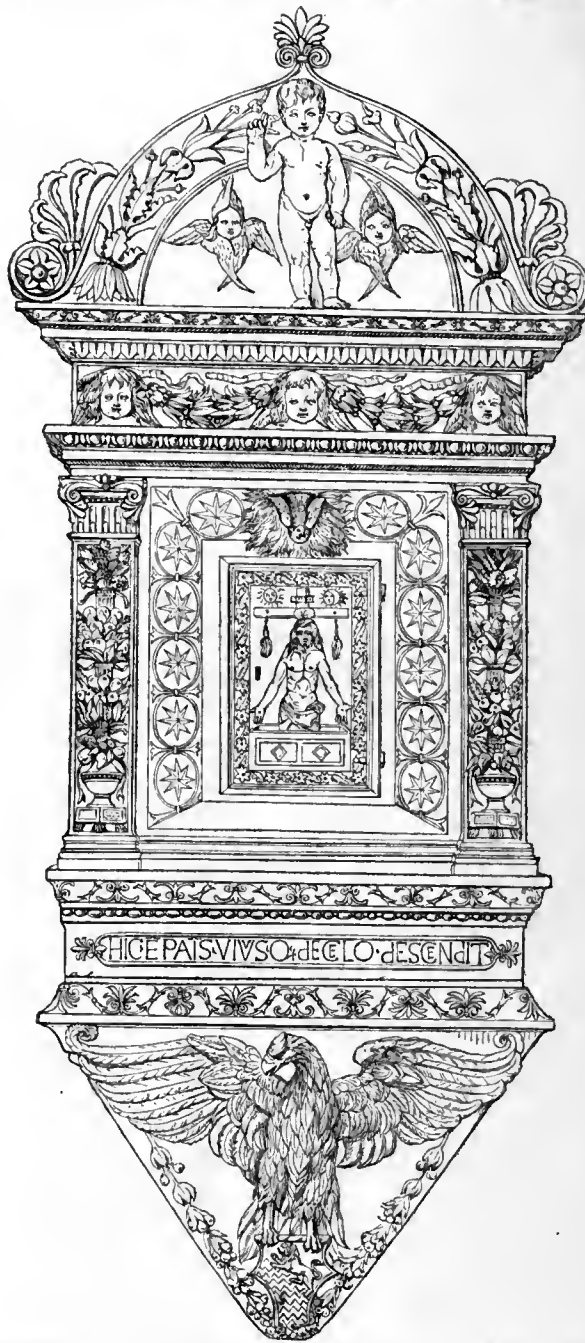
It is customary to date the revival of art in Italy at about the tenth or the eleventh century. Flaxman, however, goes much farther back. He dates it from the days of Constantine, and when Christianity became the religion of the Roman Empire. This is a question into which there is no need for us at present to enter, especially as the author of the work under review commences his labours at the thirteenth and fourteenth centuries of the Christian era. It is unquestionable, as Mr. Robinson remarks, that during the middle ages, all the western countries of Europe produced remarkable works of sculpture; but it was in Italy alone that the art attained to a perfection worthy of comparison with the antique, and in Italy alone could its monuments be thoroughly studied. In their nature, works of sculpture usually partake more or less of an architectural or monumental character, and happily a large proportion of the master-pieces of the great Italian sculptors still remain in the churches and public edifices, for which they were executed. To this day, none of the great continental museums or galleries have any systematic collections of *renaissance* sculptures. Even in Florence, which may be termed the Athens of the revival, only a few marbles and a more numerous collection of bronzes are to be found dispersed amidst the vast galleries of the Uffizj; whilst in England, until very recently, the art-student must have sought in vain for any examples of Italian sculptures. For this, and for other obvious reasons, during the last few years, efforts have been made under successive governments to secure for the South Kensington Museum such works of mediæval sculpture as were to be obtained, and especially in Italy. To this object we know that the late Prince Consort devoted much attention, and it is only just to Mr. Robinson to say, that to his enlightened research and active exertions this country is now in possession of a very considerable proportion of the specimens of Italian sculpture which had for years been accumulating in the hands of dealers and private possessors.

No doubt the cost of the collection, which has with so much assiduity and judgment been arranged at South Kensington, has been great; and some may take exception to this mode of expending the public money, but it can scarcely be doubted, we think, that the return will be more than commensurate with the outlay.

As this country has taken so paramountly the lead of all others in what may be termed the useful arts, there is surely no good reasons why it should not endeavour to rival, if not to excel, also in the domain of the Fine Arts. To accomplish this is a truly national and patriotic work, and the surest means for effecting it is to furnish students with the choicest models for examples. Prior to the assembling together of the magnificent pieces of sculpture in the Fine Art Section of the Museum at South Kensington, it was necessary for a would-be sculptor to make a tour through the cities and towns of Western Europe, in search of standards for imitation and subjects for study. This course was attended with a considerable sacrifice of money and time, and too often was impossible of accomplishment. In how many instances was it not the case with young, enthusiastic, and talented artists, that:

"Chill penury repressed their noble rage,
And froze the genial currents of their souls."

As it is, there is a fair field for exertion, and fair incentives are offered to



GEOMETRICAL ELEVATION OF THE TRIBUNE, OR CAPPELLA MAGGIORE, OF SANTA CHIARA, FLORENCE.

emulative ability. Why should we not hope, that from such a school pupils may arise whose fame will, in after times, equal that of the Pisani, Lucca della Robbia, Lorenzo Ghiberto, Michael Angelo, or Cellini?

It is time, however, that we referred more directly to the contents of the Fine Art Section of the South Kensington Museum, as represented by the catalogue which has induced the foregoing remarks. The foundation of the sculpture series of this section may be considered to have been laid by the

* Italian Sculpture of the Middle Ages, and Period of the Revival of Art. A Descriptive Catalogue of the Works, forming the above Section of the South Kensington Museum. By J. C. Robinson, F.S.A., &c. &c., Superintendent of the Art Collections of the South Kensington Museum. London: Chapman and Hall, 153 Piccadilly, 1862.

purchase, in 1854, of the "Gherardini Collection," consisting of thirty original models, by great Italian artists. These were allowed to remain for a considerable time at Marlborough House. On the subsequent rapid development of the Art Museum at South Kensington, however, it was seen that works of the class named were directly related to the varied gatherings at that place, of Italian art, the majolica wares, decorative bronzes, carved furniture, mosaics, enamels, &c. &c., and to it the Gherardini Collection was removed. In 1859—60 many acquisitions were made in Italy, and the purchase finally, of the Gigli-Campana Collection, brought the series to its present state.

The Pisani are the first sculptors whose works are referred to and illustrated in the catalogue, and justly so, for, as Mr. Robinson asserts, in reference to one of them, Nicolo, that he was "the earliest mediæval sculptor whose name, universally celebrated in his own day, has descended to the present age with undiminished lustre. For many centuries before his time, all representations of the human figure were either very barbarous, or were of the monotonous and corrupt style; which being the result of the gradual decline of antique Roman art, was finally, towards the ninth or tenth centuries, reduced to an unchanging system by the Byzantine artists." Two illustrations, well executed, serve to show the merits of the Pisani. One of these represents the marble statue of an archangel, one of a group of two archangels and three saints, which formed, originally, the angle-piers of a pulpit. The other engraving exhibits an alto-relievo in marble; subject, the Salutation of the Virgin. The original formed, probably, the frontal of an altar. They are both admirable works, and demonstrate the skill of the artists. Reference is made to other works of the Pisani family, as well as to those of Andrea Pisani, who was not related to, though contemporary with them.

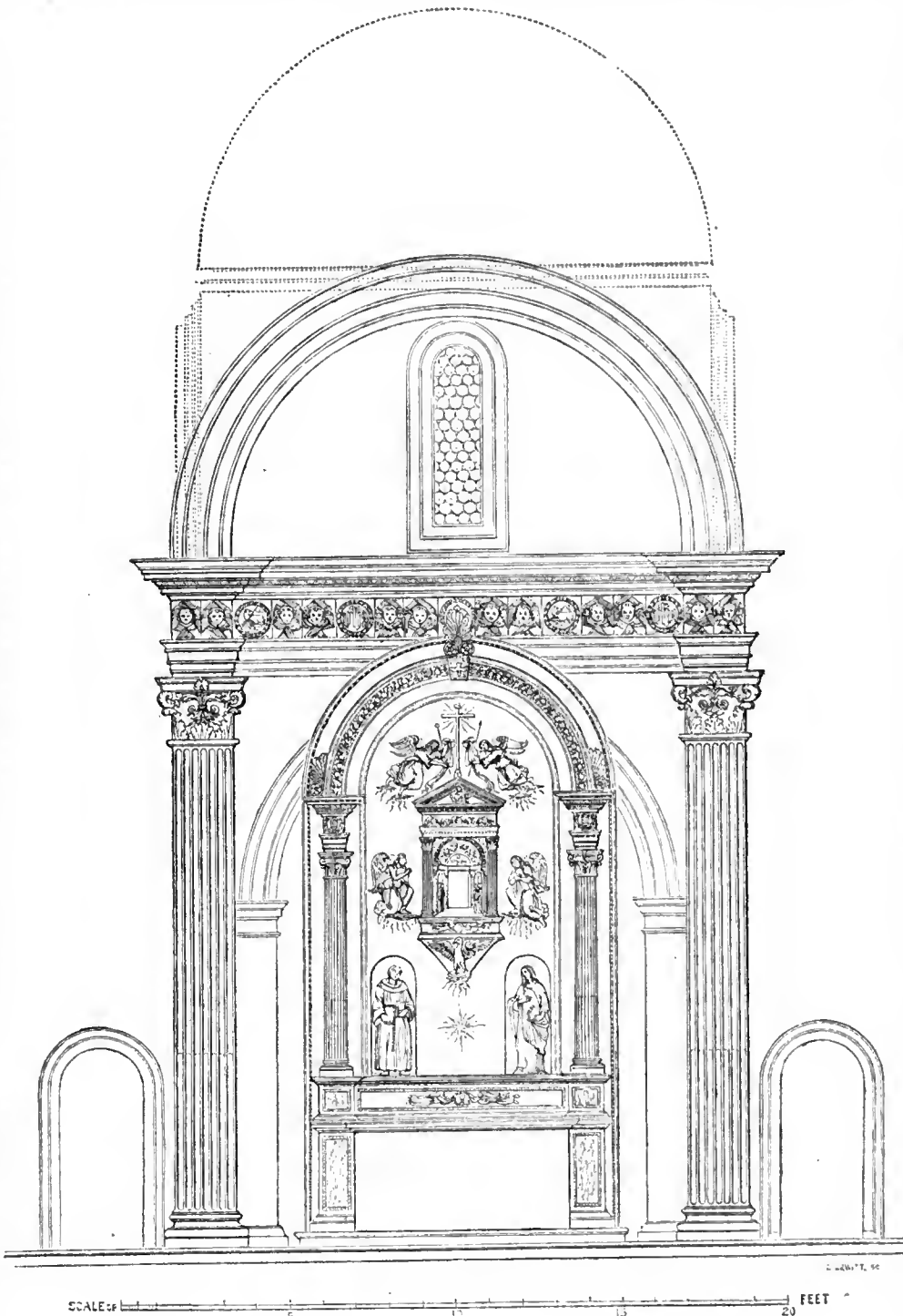
Advancing from the thirteenth and fourteenth to the fifteenth century, we come to the works of Jacopo della Quercia, Lorenzo Ghiberti, Donatello, Antonio Rossellino, Desidero, Antonio Gamberelli, and others of more or less celebrity. These are all dealt with by Mr. Robinson in a manner which speaks eloquently of his fitness for the onerous task he has undertaken and successfully accomplished. Their *chef d'œuvres* are illustrated, and brief biographical notices of the sculptors are appended. If in the space at our disposal it were possible to refer individually to the works of these eminent

men, it would certainly be a pleasing duty to do so. They were the pioneers of the glorious band of revivalists in art whose names and memories should be enshrined and honoured by architects and artists "to the last syllable of recorded time." As it is, we must dismiss them, and commend those who are desirous of learning more of them to the specimens of their labours which now happily enrich the Museum at Kensington, or to the catalogue which chronicles their merits.

Of the Florentine school, which may be said to have flourished in the

fifteenth and sixteenth centuries, Mr. Robinson furnishes us with a fine illustration, and which we transfer with pleasure to our own pages. This consists of a geometrical elevation of the Tribune, or "Cappella Maggiore" of Santa Chiara, Florence.

"The ancient convent of Santa Chiara, in the Via Santa Maria, Borgo Santa Spirito, Florence, was suppressed early in the present century; but a part of the Church, comprising the *Cappella Maggiore* or choir, and a small portion of the nave in front of it, was retained as an oratory down to the year 1848. * * * Subsequently, from want of funds, the services in the oratory were abandoned, and it was desecrated and converted into a sculptor's studio. A speculator, aware of the treasure it contained, became the purchaser of the *Cappella Maggiore*, and turned his attention to the sale of its decorations. Attempts were made to save it to the city of Florence, but they failed—fortunately for this country—and in the winter of 1860, 'the right of removing all such portions of the edifice as might be deemed desirable was acquired for the Museum.' Fortunately, again, the nature of the building admitted of the removal of all the portions necessary to its reconstruction. The ashlar stone facings of the interior of the edifice, together with the marble high-altar, have accordingly been



TADERNACLO IN CARRARA MARBLE. ANDREA FERRUCCI.

brought to England; and it is proposed to rebuild the work precisely as it formerly stood. As an opportunity so favourable for architects and artists to inspect the veritable structure will soon be given, it is not desirable that we should go into further detail respecting it. It would be ungenerous not to state, nevertheless, that the *Cappella Maggiore* is the joint work of four great Florentine sculptors, namely, Desidero da Sittignano, Simone Pollaiuolo, Andrea della Robbia, and Leonardo del Tasso, to whom, says our author, should be added, as the master-

mind from whom the idea of its erection indirectly proceeded—Fillipo Brunellesco.

Passing by other immortal workers and their almost immortal productions we reach at length Andrea Farnucci; and, as a proof of his claim to honourable mention among the other great spirits in whose company he is found, we append an illustration of his choicest work—a *Tabernacle*, or *Ciborio*, in Carrara marble.

The elaborate beauty of this we need not descant upon: for the engraver has successfully transferred it for the advantage of our readers. The height of the tabernacle is 5 ft. 6 in., and its width 2 ft. 6 in. It consists of a shrine-like frontispiece, with a door in the centre. This originally afforded access to a cupboard in the wall. The gilt bronze door is perfect, and is engraved with a half-figure of our Saviour standing on the sepulchre. Two pilasters, carved with festoons and clusters of fruit and flowers, flank the sides, and uphold a semicircular pediment or lunette, in the centre of which stands a figure of the infant Saviour, in full relief, and surrounded by foliated ornaments. The tabernacle is supported beneath on a triangular bracket, decorated by an eagle, with outstretched wings, and a shield of arms, festoons, &c. This specimen was brought from the Church of San Girolamo at Fiesole.

Following the course of time, and taking admirable note of the sculptors who from the sixteenth to the close of the seventeenth century distinguished the country which gave them birth, does Mr. Robinson proceed, and his work thus becomes an illustrated epitome of the history of the fine arts in Italy. It is long, indeed, since so valuable a catalogue emanated from the press, and its author—for although his work is modestly designated a "Catalogue," we cannot say its compiler—is entitled to the warm thanks of all who have an interest in art, or an aspiration for the honour and welfare of his country. It is impossible to rise from the study of such a work without feeling one's self elevated, purified, and, as it were, carried back in imagination to those days when, in truth, intellectual giants existed in the fair, and, thank God, now *free* land of Italy.

We unreservedly recommend the work under notice to the attention of all who are engaged in the ennobling study of sculpture and its sister art—architecture.

BUILDINGS IN SCOTLAND.

(From an Edinburgh Correspondent.)

NEW FREE CHURCH AT IRVINE NEAR GLASGOW.—The design of Mr. F. T. Pilkington, architect, of Edinburgh, having been selected through competition for the above church, the work will be commenced immediately. Approaching Irvine by the Railway from Glasgow, the tower and spire which rises to the height of 120 ft. will be seen to great advantage. The tower consists of a lower stage, 76 ft. high, in front of which is the main entrance, consisting of an archway, richly carved and foliated on the under side. The porch gable is filled by geometrical figures, in stones of different colours. There is a rich cornice at the top of the lower stage of the tower. The upper stage of the tower is 44 ft. high, and is octagonal, having four sides occupied by two light windows, surmounted by very acutely pointed gables, filled with various coloured stones. The other sides of the octagon are occupied by pinnacles. Both the gables and the pinnacles rise above the spire tables, so as to soften the junction of the tower and spire.

Halfway up the spire there are four gables, with ornamental openings. The foot of the west gable is an arcade, consisting of one large centre arch, with two smaller arches on either side supported by clustered columns. By means of this arcade, access is obtained to the higher elevation of the church. Over the two sides of the arches are two two-light tracery windows, springing from a richly carved cornice; above this is a rose-window, 20 ft. in diameter, canopied over by a foliated arch above the arch; the gable is filled up with rays of coloured stones—the green, white, and red stone of the district; each ray is disposed in geometrical patterns. This gable to the top of the finial measures 99 ft. high. On the south-west corner, grouping along with the tower and the west gable, is the arcade, continued along two sides of the church.

Above the arcade, which at this corner is circular, the session-house is placed, surmounted by a slated spire; on either side of the body of the church is an octagonal apse, 68 ft. high, the north and south facets of which are occupied by a large trefoil arch, containing a two-light window and a vesica. The sides of the church are occupied by three-light pointed windows with double columns. On the north side, which is also seen from the railway and the bridge, there is a vestry, surmounted by a slated spire in two stages, rising to the height of 61 ft. At the east end of the church is to be a large schoolroom, in keeping with the general design of the church, and capable of accommodating about 300 children. The church is to be seated on the ground floor for 600 persons, and the gallery at the west end of the church is to accommodate 150, making a total of 750. The session house is so arranged that when there is a crowd, it can be thrown into the church.

The roof is to be an open timber one, and the height from the floor to the ridge is 51 ft. The cost of the building is estimated at £4,000, and the mason work has been contracted for by Mr. Wilson, and the carpentering by Mr. Wright. The church is expected to be completed early next year.

NEW BUILDINGS IN WEST REGISTER STREET, EDINBURGH.—A large and handsome building is in course of erection in the above place, which is now

raised up to the second floor. The building consists of three flats, surmounted by a mansard, in which there will be one full flat, and an attic or half flat, the whole rising to the height of upwards of 60 ft. The façade to West Register Street is about 46 ft. in length, and the north façade is 65 ft. in length. The first, or ground floor is to be occupied as a show-room by Messrs. Hume and Co., plumbers and gasfitters, and consists of openings, divided by small piers, with archivolts and vermiculated key-stones. The windows of the third floor will have moulded architraves, with retrieves, and are to be divided by pilasters with bases. Above these is a massive and highly ornamented cornice, finished with an ornamental rail, at the base of the mansard. The mason work is being executed by W. and D. McGregor, and the work is so far advanced that it will be ready for the roof in about five weeks, but the premises will not be fully occupied till the early part of next year.

NEW TOWN HALL, PORTOBELLO.—The plans for the proposed new Town Hall have been prepared by Mr. David Bryce, architect, Edinburgh, and approved of by the Building Committee, and the estimates are now being taken for the erection of the building, which is to be of the old Scotch baronial style, and will prove a handsome addition to the street architecture of the burgh. The work will be commenced as soon as the estimates are settled upon, and it is expected that the foundation stone will be laid early in the season, with full masonic honours. Communications have been entered into with his Grace the Duke of Atholl, grand master of the lodge of Edinburgh, to lay the foundation stone towards the end of July next.

ARCHITECTURAL ASSOCIATION.

A MEETING of this body was held at the rooms, 9 Conduit Street, on Friday; Mr. A. W. Blomfield, M.A., in the chair.

Professional Charges and Practice of Architects.—Mr. PARAIRE remarked, that the document recently agreed to by the Institute of British Architects, respecting the Professional Charges and Practice of Architects, as it bore very particularly upon the profession, should be well considered. At the present time the public generally were not aware of what constituted the duties of an architect, and in many cases thought architects made charges which they were not entitled to do. And as the document to which he referred came from the leading architects of England, he thought it should be made more public than it had yet been. This was a matter of very serious importance to the profession. Mr. PARAIRE thought the members should, in the meantime, carefully study the professional charges, and at some future time he should draw the attention of the Association to the subject.

Office-bearers for the ensuing year.—Mr. Ridge and Mr. Walter were appointed scrutineers of the voting papers for the election of office-bearers for the ensuing year. At the close of the meeting the following gentlemen were declared to have been elected:—*President*, Thomas Blashill; *Vice-President*, R. Norman Shaw; *Ordinary Members of Committee*, Messrs. Blomfield, Bunker, Spiers, Lewes, Tarver, Goodman, Paris, Paraire, New, and Gritten; *Honorary Treasurer*, Charles J. Adams; *Honorary Solicitor*, Francis Truett; *Auditors*, J. W. Penfold and J. M. Rickman; *Curators*, C. H. F. Lewes and J. W. Walter; *Honorary Secretaries*, Charles J. Adams and H. Attwood Reeves.

Restoration of the Chapter House of Westminster Abbey.—The CHAIRMAN said, he had to announce the receipt of a letter from the Committee for the Restoration of the Chapter House of Westminster Abbey, inviting members to sign the memorial to the Government in favour of the restoration being effected at the expense of the country, instead of by private subscriptions. The memorial was numerously signed in the course of the evening.

Visit to Westminster Abbey.—The CHAIRMAN said, he had the pleasure of informing the meeting, that Mr. Roger Smith and himself called upon Mr. Scott, respecting the proposed visit to Westminster Abbey by the members of the Association. Mr. Scott at once undertook to accompany the members of the Association over the Abbey on Saturday next (to-morrow), the party to meet in the cloisters at 3 o'clock. The Very Rev. the Dean had given his full consent to the scheme. The members, especially the younger ones, should bring note-books with them, for the purpose of taking down any remarks Mr. Scott might make during the visit, particularly with reference to future sketchings of the building. Mr. BLASHILL said, he thought those members who missed this opportunity of visiting the Abbey would much regret it afterwards.

It appeared, from a letter sent to the meeting by Mr. Roger Smith, that a prize—a copy of Mr. Scott's work on Westminster Abbey—is to be given to the member who shall write the best account of the visit to this renowned structure; the papers to be sent to the honorary secretaries of the Association on or before the 1st of September; the prize to be awarded at the opening meeting of the next session; and the judges to be chosen at the Abbey from amongst the members present.

ANNUAL CONVERSAZIONE OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE entire suite of rooms occupied by the Royal Institute of British Architects, as well as the adjoining Architectural Galleries in Conduit Street, Hanover Square, on Wednesday night presented a gay and animated scene, by the presence of a brilliant assemblage of ladies and gentlemen, on the occasion of holding a second annual *Conversazione* of the leading archi-

tectural body of the kingdom. The first meeting of a similar character was held in July last, and was attended with marked success; this year the *réunion* has been no less prosperous, although probably the paintings, curiosities, and articles of *vertu* exhibited, were not so numerous, no doubt owing to the superior claims of the Great International Exhibition at South Kensington. The display, however, was worthy of the occasion, and of the distinguished professional body in whose honour it was elicited. Last year the greatest personage in the realm, and her royal husband, the great patron of art, sent munificent contributions to the art-display of the first *Conversazione*; this year the widowed Queen, not forgetting the great interest the late lamented Prince always took in the welfare of the Institute, gives a renewed token of her gracious condescension, by the contribution of many valuable antique drawings. Multitudes of other friends and well-wishers of the Institute and of architecture, and the fine arts generally, were not idle, and the result was that the second *soirée* was a complete success. The whole of the rooms were decorated in a superb and tasteful manner, under the management of Mr. Chaffers, of Fitzroy Square (whose skill and experience in the arrangement of works of art are well known), assisted by the honorary secretaries and several other members of the Institute. There were exhibited paintings in oil and water colours, embracing portraits, landscapes, &c.; statuary, engravings, ivories, photographs; autographs; antique vases; gold, silver, and mixed plate; drawings; sketches; ancient and curious cups, of various kinds; antique tapestries; terra cotta figures; ivory figures on stands, and ivory figures on horseback; old ruby-glass vases, silver mounted; silver dishes; Indian vases; tortoiseshell and pearl boxes; old buhl brocket; a pair of bronze-winged griffins; an ivory tankard, silver mounted; curious candlesticks; coral; specimens of work from Dresden, Sèvres, Limoges, Abruzzi, and Venice; ivory chapel; friezes, bas reliefs, work in plaster, medallions; silver chalices, patens, tankards; case of illuminations; wood carvings; illuminated missals; Wedgwood ware; a silver-inlaid hookah; carvings in ebony; daggers; pieces of needlework in frames; carved ivory horn; ivory drinking-horn, with hunting subjects; views of Indian temples and costumes, &c. &c. In the west gallery, the Welby Pugin Collection of sketches and drawings ornamented the walls, as well as a large number of antique portrait engravings, from a variety of sources. On a table in the centre of this gallery were shown, by Mr. John W. Brett, beautiful works in cameo, bronze, and a number of vases in antique marbles, including Rosso antico, Giallo antico, porphyry, sienite, serpentine, grand antique, verd antique, &c. In the Great Gallery were the drawings and sketches shown at the Architectural Exhibition, with the addition of the famous sculptural drawings in the classic style, by Flaxman, and some beautiful specimens of tapestry of the fifteenth and sixteenth centuries. The East Gallery contained many encaustic tile, and other decorations. In the lecture-theatre of the institute, Mr. John Webb exhibited a most interesting Gothic cup, of mixed gilt metal, representing a citadel; Mr. John Norton, original drawings, consisting of architectural compositions by Michael Angelo, Sir Christopher Wren, Sir James Thornhill, and Titian; and drawings of the Clereaux; Mr. Thomas Woolner, a marble bust, and some animals beautifully executed in bronze; there were also exhibited in this room some valuable pictures by Turner, Holman Hunt, Arthur Hughes, and John Milais. Mr. J. P. Seddon contributed to this room his brother the late Mr. Thomas Seddon's picture of the "Pyramids," a duplicate of his picture of "Jerusalem" (a work of art purchased by the National Gallery), and pictures by the same of the interior of a room at Cairo, and of the Mountains of Moab; and another work of art, representing Giotto painting the portrait of Dante, by D. G. Rossetti. Her Majesty contributed thirteen drawings of ancient buildings, including one on vellum (by Inigo Jones) of Whitehall Palace, and several of the Coliseum at Rome, the Farnese Palace, &c.

The hall and staircases were ornamented with flowers, evergreens, statuary, &c.; and in the course of the evening tea, coffee, ices, and other refreshments were supplied to the visitors. About 1,500 invitations to the *Conversazione* were issued by the Institute.

Amongst the contributors of the articles exhibited were:—Her Most Gracious MAJESTY THE QUEEN; the Hon. Emily Eden, Mrs. L. H. Michael, Mrs. Manson, Miss A. Manson; the Marquis D'Azelegio; Lord Auckland; Mr. Tite, M.P.; Mr. Frederick Davis, Mr. G. J. Mair, Mr. John Myers, Mr. Tebbs, Mr. P. Norton, Mr. J. Norton, the Arundel Society, Mr. T. H. Wyatt, Mr. T. Whitehead, Mr. Thomas Keble, Mr. W. Carr, Mr. Durlacker, Messrs. Farrer, Mr. J. P. Seddon, Mr. John Webb, Mr. Morton Edwards, Mr. Rogers, Mr. Bellamy, Mr. E. Sampson, Mr. G. P. Boyce, Mr. T. Roger Smith, Mr. J. Livock, Mr. William Essex, Mr. Woolner, Mr. H. B. Garling, Mr. E. J. Kentze, Mr. William Simpson, Mr. Edward Davis, Mr. John Leighton, Mr. Albert Way, Mr. M. Digby Wyatt, Mr. John Papworth, Mr. H. G. Bohn, Mr. A. J. B. Beresford Hope, Mr. John Henderson, Mr. May, Mr. Thomas G. Keble, Mr. R. Helbronner, &c.

STUDIES OF MODERN ARCHITECTURE AT HOME AND ABROAD.

By G. R. BURNELL, ESQ.

From "ARCHITECTURE OF THE VICTORIAN AGE."

(Concluded from page 447.)

THERE are two important remarks to be made on the subject of the want of taste which characterised the English Architecture of George IV.'s era, and of the dawn of the revival of mediæval art throughout Europe.

The first is, that it rarely happens that the nations which occupy distinguished places in the world's history as guides and rulers in political affairs, are at the same time remarkable for the excellence or the originality of their arts; and that, whenever one of those social revolutions occur by which the external characteristics of a nation are altered, it is heralded by a literary movement preceding the artistic one. The second is, that the change of taste, feelings, and opinions which accompany these revolutions (or *palingenèses*, as Ballanche calls them), only exhibit themselves in the art productions of the successors of the generation which immediately works out the moral problems on which those revolutions depend. Thus, the old Romans avowedly claimed credit to themselves for the possession of the power of conquering the world, whilst they admitted the superiority of the Greeks in the arts which refine and adorn life—or, as Virgil said—

Excudent alii spirantia mollius æra,
Tu regere imperio populos, Romane, memento!

and the brilliant periods of the Medicean and of the Louis XIV. ages corresponded but too closely with the moral degradation of the nations amongst which they arose. Ampère also acutely remarks, that even modern Rome herself, at the period when her influence was the most decidedly moral, did not produce any great artists in her own district, but was compelled to seek her architects, painters, and sculptors at Florence, Urbino, Bologna, &c. Again, it was amongst the contemporaries of Boccaccio, Petrarca, Giotto, and Brunelleschi that the movement in favour of classical art and literature commenced, to be worked out by the Bramantes, Michael Angelos, Filieaias, and Bambos of a future generation; just as Sir W. Scott, Victor Hugo, Schlegel, Savigny, Pugin, Lenoir, Schinkel, Boissée, Manzoni, &c., the leaders of the intellectual movement of the period between 1814 and 1830, paved the way for the technical revival of the mediæval feeling of later dates. In both these cases, however, the literary and scientific revival preceded the artistic one; and the intellect of the age had assumed a marked tendency, men's minds had been resolutely turned towards certain idols for many years, ere the more material arts assumed the expression of the prevalent modes of thought. It would seem that it requires a longer time to discipline the faculties which are brought into play in the production of works of pictorial, sculptural, or monumental art, than it does to discipline the poetical or the philosophical faculties; and it actually did happen that the romantic school established its power and influence, carrying the European mind back to the study of the middle ages, several years before artists or architects dared to cast aside the traditions of the classical schools in which they had been educated. Between 1814 and 1830 the prevalent styles of art in France and in England differed but little from those of the antecedent period; but when the generation educated under the influence of the ideas fermenting, as it were, at that period, came upon the stage of active life, their hopes, aspirations, and day-dreams found vent in the productions of their hands. Some of the architects of the period above named did, it is true, attempt to adopt the *Gothic* style, as it was still called; these works at the present day are bitterly criticised by the students of archaeological details, and, indeed, they were very ludicrous affairs in many instances; but they as often display the existence of the same description of sentiment—of the same mental idiosyncrasy—as the one which had inspired the middle ages themselves, when examined by those who can look beyond the character of a foliage decoration, or the profile of a moulding, into the deeper spirit of the inspiring genius of the whole of the respective monuments.

It is desirable to dwell upon these considerations, because there is a tendency at the present day to confound the ideas of national taste and of national prosperity, and to regard the refinement of the one as the necessary predecessor of the other. History would appear, however, to teach another lesson, and hitherto the nations which have turned to the excessive cultivation of their artistic fancies, have witnessed the decline of their moral virtues, and consequently of the elements of their power and political superiority. There are dangers in the excessive development of any order of faculties to which the students of fine arts, from the very nature of their pursuit, are especially exposed, on account of the imaginative character that pursuit is likely to foster. In the body of the nation itself, when the arts are more than usually cultivated, somewhat of the same phenomenon occurs, and the refinement and luxury thus expressed lead to a morbid and effeminate delicacy of thought and feeling directly opposed to the manlier and higher order of mental character. The state of English and French architecture in the respective periods between 1800 and 1814, and of 1814 and 1830, seem to illustrate, in a partial manner, these views; and decidedly inferior as our schools of architecture then were to those of our neighbours, it may fairly be questioned whether our very deficiencies were not indications of the prevalence of a healthier tone of the public mind than could be discerned in the more artistic productions of our neighbour. The buildings of the later period of the Georgian era were, no doubt, singularly devoid of taste, and they did not indicate any deep or sincere faith on the part of their authors; but in these respects they stood in marked contrast with the productions of the followers of other arts and sciences of their day; and thus must be considered to mark simply a transition state in their own particular walk. It could not be, that the epoch and nation which could boast of such men as Playfair, Dugald Stewart, Reid, Byron, Shelley, Wordsworth, Southey, Coleridge, Lamb, Flaxman, Turner (in his best day), Wedgwood, Rennie, Telford, Dodd, D. Stevenson, Watt (at the close of his career), Olynthus Gregory, Tredgold, F. Bailey, Ivory, Sir H. Davy, was in any way inferior to other times or nations "in the weightier matters" of life; and even the strange vagaries of the Pavilion, of All Souls', Langham-place, and the questionable repairs of our cathedrals, indicated that a profound

movement was then going on in the national mind, which has paved the way to much of the improvement of more modern times.

At the present day we are apt to treat with ingratitude the services rendered to the cause of architecture by the researches and the archaeological discoveries of the Restoration era; but a great portion of the credit awarded to the artists of subsequent times ought, in justice, to be awarded to those who collected—often at great personal risk—the elements of artistic education. Our own Aberdeen, Hope, Gell, Inwood, Wilkins, Cockerill, Donaldson, Pugin, Wyld, Britton, Daniel; the French Decau, Percier, Fontaine, Montigny, Clochat, Quatremère de Quincy, Raoul Rochette, Visconti, Dusommerard, Nodier, Mérimée, &c., had studied and reproduced the various forms of ancient art, and had called attention to those of the Middle Ages, of Egypt, and of India. The seed thus sown has yielded good fruit, but our debt of obligation to our predecessors is not the less great; and though the architecture of the period between 1814 and 1830 did not produce any buildings able to characterise a “style,” it rendered it easy for its successors to approach that desired consummation. In fine, this period was one of social and moral transition; for the conviction of the stability of old forms of law, philosophy, art, and even of religion, had been violently shaken by the events of the end of the seventeenth, and of the beginning of the eighteenth centuries; and men were anxiously examining the grave problems of man’s destiny here and hereafter, and the mode of organising society so as to allow him to work out that destiny in the freest and most satisfactory manner. The architecture of the period reflected truly this state of the public mind. It was essentially uncertain and tentative. All previous styles were tried in their turns, and their merits discussed, but little originality was introduced into the works of the architectural students. Rousseau said, that “quand on commence à raisonner on cesse de sentir;” and so it seems to have happened with the architects of the Restoration epoch, and their productions are more remarkable for learning than they are for fancy or for imagination, especially towards its close. At any rate the public monuments and the private constructions of this period indicate that a great problem was being worked out, and that the past and the future were arrayed face to face before thinking minds.

This was not the case only in the countries we have hitherto exclusively considered; for in the newly created kingdom of the Netherlands, and throughout Germany, the same uncertainty and the same evidence of aspirations after a more stable social organisation may be discovered. It is true that the Dutch had subsided contentedly into the sleepy indifference which has so strangely characterised them of late years; but the Belgians were beginning to shake off the incubus of the French occupation, and of the deliberate exclusion from the commerce of the world to which they had formerly been condemned by the jealousy of their formidable rivals of the United Provinces; and Brussels, Ghent, Liege, Antwerp, were beginning again to adorn and improve their town architecture. In Germany, the signs of activity in this field were more distinctly marked still, and the schools of Vienna, Berlin, and Munich, were earnestly striving to eliminate a style of their own, under the guidance of such consummate artists as Schinkel, Von Klenz, Knoblauch, Von Gärtner, Ohlmüller, Von Hübsch, G. Moller, J. G. Müller, &c. In some respects, indeed, the German Architecture of the Restoration epoch must be considered to be of a far superior character to that of any of the contemporary European schools, for it was bolder, more distinctly national, and more fraught with promise for the future, than they were; yet even at this time the cold pedantry and the dreamy mysticism of the German intellect could be discerned in the architecture of the various capitals; and there is a lack of spontaneity about the marvellous adaptations of the forms of antecedent art, to be discovered in the Aukirche, the Glyptothek, the Theatre of Mainz, the Altkirchenfelder Kirche, &c., which goes far to mar their effect. Of late years, indeed, German art has been singularly “bureaucratic” in its spirit, and it bears ineffaceable signs of the personal influence of the rulers of the day, and of the tyranny of schools; self-dependence is not a German virtue, and it would be but lost labour to seek for its manifestation in German art. As for “the geographical expression,” Italy, and as for Spain, there was so little national independence, and so little personal liberty in them during the period we have attempted to review, that they may safely be left out of account in the endeavour to discover the philosophy of architectural development.

HOUSES FOR THE POOR.

THE *Dunder Courier and Argus*, referring to the “Report of the Committee on Houses for the Working Classes, to the general assembly of the Free Church of Scotland,” says:—“There is a subtle sympathy between the mind and the body, by reason of which bad dwellings fix and perpetuate bad habits when they have been formed, and encourage their formation where they have not previously settled. All that is well known, and has been so from the time the subject was first investigated; and it is equally notorious that in every large town there are thousands of the working classes living in houses of the very worst kind. Old houses separated into apartments of two rooms or one, are the places in which they and their families are crowded like pigs in a sty, without the means of being clean or decent, much less comfortable; and there, beside the risk of moral degradation, scanty light, impure air, foul smells, and insufficient drainage, are standing invitations to physical disease. When the report says that these places are inferior to the wigwags of North American Indians, it does injustice to the red men of the New World by instituting the comparison. Nowhere, in the whole history of the world, have there been

known worse incentives or more powerful provocatives to vice, than are presented in the cities of to-day, and which form a part of what men proudly boast of as ‘civilisation.’ This is a state of things which must be remedied, or the consequences of which must be borne. There is nothing truer than this—that the working classes are the foundation of a State. On that basis all else must rest. The superstructure may be magnificent, but if the foundation rot beneath it, there is danger of its fall; and our working classes are exposed to influences which it would be folly to suppose are not sapping the sources of their powers. The question is, where is the remedy to be found, and how is it to be applied? The report points to the fact that it is not a remedy, but the reverse, to pull down the squalid buildings in which the poor are crowded. The only effect of that is to drive them into those which remain, and thus to render more intense the evil. Instead of more room, there is less, and the dens which were before too full, become fuller by the destruction of a part. If any good is to be done, before there is destruction, there must be construction. There must be new houses before the old ones are pulled down. Two difficulties here present themselves. In densely populated cities, where is the ground for new buildings to be had? That is a legislative question. If the ground were ready, who is to erect the buildings? That is a commercial question. We have only space now to say that the committee propose that Parliament should be applied to for powers to take ground for working men’s houses, in the same way as is done for the construction of railroads. As to who must build the houses, startling as it may appear, the report says, the working classes themselves.”

THE GENIUS OF TURNER.

A COMPLETE or final idea of the character and achievements of Turner’s genius I cannot profess to have formed. But I can say with decision, that I have discerned in him certain lineaments, vague yet unmistakable, of a gigantic mind, great in its simplicity, in its massiveness, in its sweep of comprehension, in its concentration of energy. Turner had none of your perked and paltry originalities about him. His power of plagiarism was as magnificent as Shakespeare’s, Goethe’s, or Carlyle’s. His real originality was no more doubtful than theirs. “He who has really caught the mantle of the prophet, is the last man to imitate his walk;” and he who catches the mantle without imitating the gait is the true original. Turner was the most earnest of scholars; he reminds you continually of other painters; but what he found brick, he left marble. As a realist, his grasp was irresistible, and will not now be questioned. But it is my deliberate opinion that as a poet he was more wonderful than as a realist. He rendered mountains and skies, forests and streams, as they had never previously been rendered. Every bone in the frames of the reeling giants whose weight steadies the earth, every wrinkle on their brows, every gleam of light upon their craggy forehead, he brought out with solitary power. The springing also of the bough and the sinewy strength of the stem, the wayward grace of the river and boiling torrent foam, the hot haze, swooning over the distances of midsummer, the scenery of the upper heavens, the lurid or fiery-red of stormy sunset, all were Turner’s own. But if he surpassed other painters in these and other provinces of pure realism, he surpassed them still more, as I said, in strictly poetic, in creative might. Who could select like Turner? You know that city and the scenery in which it is embosomed: but did you ever see it in that grandeur of attitude? Could any other painter have showed you it so? You would say cities and mountains were proud to sit to their great portrait painter, since none could perceive like him their characteristic points, none could so elicit and combine their distinctive and contrasted beauties, none could let them so well be seen. Yet selection is by no means the only power of Turner. Taste might go far to impart or regulate a power of selection, but the sovereign imagination alone could give the deepest poetry that dwells in Turner’s pictures. He seems, by life-long observation and musing, to have detected nature’s secrets of effect, her modes of contrast, her suggestions of thought: and his imagination struck out more grandly that at which she aimed. The strength and stateliness of the precipice, the majesty of mountain-shadow, the exulting magnificence of broad streaming light, the mysterious suggestion of infinitude by the steep and soaring line of mountain side, lost in the hanging clouds that seem to droop from the outer immensity, are all, as it were, vocal in a picture by Turner. The mountains are no longer dumb; Turner caught their inarticulate accents: and when he made them speak, all could understand them. This is not an easy thing to explain in words; but the universal sentiment as to prints from Turner proves that I am not alone in finding in his works the most poetic renderings of nature’s deepest expressions. A critic whose literary immortality is, I think, as secure as that of Spenser or King Colley, is severe upon Mr. Ruskin for demanding thought in pictures. The thoughts that are built up in the mountains are to that critic a great mystery. But if you ask me where you will find thought, poetry, invention, in landscape painting, I refer you to any volume of engravings after Turner.

I cannot fix upon any picture to illustrate the characteristics of Turner’s genius; and to more than one picture I cannot now refer. Let me take one almost indiscriminately. In Lord Ellesmere’s Gallery there is a large picture by Turner, painted evidently after the great Vandervelde in the same collection. I shall briefly compare the two.

The Vandervelde contains a considerable number of vessels. In front is a Dutch packet-ship, a gleam of colour on its sail from the dreary sunlight to windward. It mounts a broken sea, dipping into its foam, which dashes up over the bows. To leeward is a ship with sails clewed up, facing the wind.

The sky has two great banks of cloud, one of them again dividing into three tower-like masses, through which is shed a faint illumination of stormy sunlight. The sea in front is broken, yeasty, racing before the wind with fearful velocity. Look now to the Turner.

One vast bank of cloud, piled mountain after mountain, comes darkling over its waves, "cramming all the blast before it." Its rounded tops are steeped in the sombre light which appears in the Vandervelde. A gleam of the same rests on the sail in front. The whole under part of the great bank of cloud is black and thundery; beneath, the white waves are seen mysteriously rising and writhing. In the distance, a tall three-masted ship has furled all sail, and looks towards the blast. In front, two small vessels are lifted into prominence, running foul of each other; the one with canvas down, the other with bellying sail attempting to hold up to the wind. A sea strikes them both, dashing in wild foam over the bow of that one which has its sail spread. The waves in the foreground roll in one or two huge, angry ridges, the trough of the sea being filled with seething foam.

It is known that the picture by Turner is a companion to that by Vandervelde, and was a direct attempt either to imitate or to grapple with it. But mark how the conception, or rather conceptions, of Vandervelde, gain from the touch of Turner. The forms of the Dutchman's picture seem to have been dissolved or sent apart, and again brought together, into grander, simpler masses, at the word of a mightier imagination. Vandervelde's sea is covered with ships: only one or two break the loneliness and gloom of Turner's. The sea of Vandervelde is chopping and gusty, a broad plain of countless equal waves: one or two mighty ridges, with millions of wavelets in their hollows, occupy the front of Turner's. But the alteration in which the master mind and hand are most signally displayed is that passed upon the clouds. These all come together in Turner's picture; no division breaks the unity of the simple, overpowering mass; it rolls on there, dark, heavy, towering, majestic, in the grandeur and terror of tempest.

It could, I think, be distinctly proved, that a change, similar to that observable in Turner's treatment of Vandervelde's subject, was effected by him in all that he made, by earnest study, his own. The conceptions of other artists I compare to the many hills, interesting, varied, beautiful, of the newer geological formations. They may be the picturesque crags of the limestone, they may even be the jagged erests of the metamorphic hills; but they are comparatively low and comparatively many; the imagination of Turner, working from lower depths and with mightier power, upheaved the central ridge, the primary mountain chain, rising above all the rest, unapproached in height, and unbroken and alone in majesty. Composition becomes, with him, vital artistic unity; prettiness becomes noble symmetry and proportion; beauty becomes sublimity. I think I can admire the grace and elegance, the liquid sky and limpid water, the ordered pillars and dignified fronts, of Claude. But my perception of the fact that a precipice is more majestic than a palace gable, is hardly more distinct than my perception of a greatness and majesty in the forms of Turner totally absent from those of Claude. The latter is to the former as Pope was to Homer. And this I say while aware of the historical fact that Turner studied Claude with tears of despairing admiration in his eyes.—*Bayne's Essays.*

TASMANIAN TIMBER.

THE visitor to the International Exhibition cannot fail to observe, in the Central Avenue, a very high trophy of Tasmanian timber, which the Commissioners of the Exhibition for Tasmania have placed there as a specimen of the different kinds of wood grown in that colony. This structure was designed by Mr. George Whiting, Secretary to the Tasmanian Commissioners, to illustrate two important branches of the local industry, viz., the abundance, variety, and lasting qualities of the timber, which may prove acceptable to ship and other builders, and railway contractors; and, also, illustrate the peculiar adaptability, from their beauty of colour and marking, of the Tasmanian cabinet woods for the general purposes of ornamental furniture.

Mr. Whiting, who has compiled a brochure upon "The Products and Resources of Tasmania, as illustrated in the International Exhibition," says:—"To render this trophy a temporary museum of the more useful Tasmanian woods, specimens have been procured from the oldest public buildings of the colony, each of which is fully labelled, and will tell its own tale. The Old Gaol and the Old Court House of Hobart Town have furnished sleepers, door-posts, flooring-joists, boards, window-lintels, and architraves—of Huon pine, blue gum, and stringy-bark—which are as sound as when built in forty years ago. These relics of the past, had they power of utterance, might relate legends of human trial, suffering, and adventure of early colonial days, which would now be deemed incredible. But the evidence which they offer of their own durability must be taken as incontestable and complete. Nearly all the timber of the Old Hobart Town Court House has been found to be sound, and has been used in the erection of the New Post Office just completed on the same site. But the builder and the railway engineer may ask, 'Will Tasmanian timber resist equally well the atmospheric influences of the open air?' The naval architect will enquire into its 'behaviour' under water. Let the old piles, and planks, and posts, in the trophy supply the answer. Some of these old piles, which have been split down longitudinally in order to facilitate inspection, have been partly submerged daily, as the tide rose and fell, for periods up to twenty-one years, whilst forming part of the wharves of Hobart Town. Blue gum and other planks from the Wharf Platform will show their power of resistance, for the same period, of copious showers, hot sunshine, dry winds, and heavy traffic. Other material witnesses to the durability of Tasmanian wood have

been summoned from a colonial-built vessel, which has been stranded for fourteen years, in the shape of planking, timbers, trunnels, &c., which also fully attest this fact. A Tasmanian schooner, built of blue gum—the Flying Squirrel, 97 tons—has twice been thrown by the surf above high-water mark—and on being got off did not exhibit the slightest deflection in her lines, or a sprung trunnell, and has never even required to be pumped since undergoing this severe ordeal. Veteran posts from the earliest fences of the colony, of peppermint, and other woods, which have stood faithful sentinels over the crops and herds of the settlers of the last generation, here invite inspection of their almost unimpaired condition. What further proof can be required of the lasting and useful properties of Tasmanian woods?

"That these woods, particularly the blue gum, may be seen in all conditions the ship-yards and coach-factories of Hobart Town have furnished specimens as usually seasoned imperfectly, and as seasoned carefully. The specimens of ship-timber, from Mr. Macgregor, have been ten years, and that from Mr. Ross has been twelve years, lying in an open ship-yard, exposed to all weathers. With these specimens of rough seasoning may be compared the blue gum plank of Mr. Burdon, coach-maker, which has been carefully seasoned under cover for seven years; and other specimens of Dr. Crowther's, which have been seasoning for ten years. This comparison will serve to show that much depends on the seasoning of the blue gum; that it is a most valuable wood when fairly seasoned, and that, even when roughly prepared, this wood is unsurpassed for all out-door purposes requiring strength and stability. Another variety of the Eucalypti—the gum-topped stringy bark—nearly, if not quite equal, to blue gum, and procurable in greater abundance, of a straighter grain, and of more free working character, has more recently become an object of considerable attention. Its durability and general quality are well illustrated by a plank, which, with the old piles, has been exhibited by Mr. Oldham, that has been in use twenty years in the platform of the Hobart Town wharf.

"The octagonal column is formed of eight spars of blue gum, stringy bark, white gum, silver wattle, blackwood, and sassafras. The eight sides of this column are formed, at the base, by eight large planks set on end, of blue gum and stringy bark, from Dr. Crowther's timber establishment, at Oyster Cove. The thickness of the trees from which these planks have been taken will be seen at once by persons conversant with timber. The heart of Tasmanian trees is nearly always unsound. In these planks, as in all planks used in the colony for ship-building, the heart is cut off, and the width of the plank shows the size of the tree outside of the heart. To show the length of which ship timber can be obtained, planks have been sent home of blue gum, measuring 90 ft., and of stringy bark, measuring 80 ft. in length, of equal width and soundness throughout.

"Samples of other ship timber form the base of the trophy, which is thus constructed:—Five planks (20 ft. long), of blue gum, stringy bark, blackwood, and myrtle; the two former being fitted for ship-building, and the two latter for cabinet work, are first laid down. Placed across these, are ship's keel-pieces (10 ft. long, squared), of blue gum, and stringy bark. Immediately on these lie, transversely, joists of stringy bark, covered with ordinary flooring boards of the same wood. The framework of the pedestal placed on this floor is composed of blue gum, white gum, and stringy bark. The joists, quartering, and flooring-boards of the pedestal-platform are also of stringy bark. The centre piece of the spiral staircase is formed of a spar of plain Huon pine, the stairs being made of this free-working and almost imperishable wood. These samples will show what Tasmania can supply of plain timbers. Of large ship's knees—the want of which has even caused a modification of British naval architecture—an unlimited supply can be obtained from Tasmania, where the stumps of the large trees which might supply them are left to rot after the tree has been cut up. These are also shown, in the angles of the pedestal frame, of various conditions as to seasoning. A large blue gum knee, and also a blue gum crook, have been exposed to the open air nearly ten years, in the ship-yard of Mr. McGregor. In other angles of the frame are three very fine ship's knees from Tasman's Peninsula, exhibited by Mr. Boyd. There are also three smaller knees, a blackwood crook (for curved bannister work), and a fine Huon pine knee, in other angles of the trophy. In the interior of the pedestal are also some railway sleepers of blue gum and stringy bark, and pieces of white gum or gum-topped stringy bark, 12 in. by 6 in., 12 ft. in length, contributed by Dr. Crowther, from Oyster Cove, and by Mr. James Boyd, from Tasman's Peninsula; together with some sleepers of blue gum and peppermint wood shown by the Commissioners. The split palings and roofing shingles here displayed are also fine specimens, varying in length from 5 ft. to 15 ft., and in breadth from 6 in. to 24 in. These are specimens of the ordinary splitting qualities of swamp gum, which wood is valuable for this purpose, but is never used for any other. A longitudinal section of the swamp gum plank, from Port Arthur, exhibited by Mr. Boyd, will serve to show the extraordinary length and size of Tasmanian timber. The plank from which this section was taken measured 230 ft. in length. No available ship could be got to take it to London whole. The section has consequently been divided into 20 ft. lengths, in such a way that the brand cut across shall in each case bear evidence of the former connection of the pieces severed. These large specimens, and some others which could not be sent in time, prove that Tasman's Peninsula, with its tramway and excellent harbour at Port Arthur, and its large forests of these valuable timbers, is well calculated for a timber supply station to the imperial dockyards in England. The finest specimens of ship's knees are all from Port Arthur, which, together with Dr. Crowther's establishment at Oyster Cove, have supplied nearly all the best shipping and railway timber now exhibited."

THE SCULPTURED AND CROSS STONES OF SCOTLAND.

THE subject of the Scottish Sculptured Stones is one of surpassing interest, from the mystery in which the date of their erection, the people by whom they were erected, and the meaning of the symbols occurring upon them, are shrouded. The symbol of the cross, indeed, which we find so constantly recurring upon them, and in one instance, at least, a representation of ecclesiastics bending in adoration before the chalice and the consecrated host, point them out as relics of a people to whom the religion of the Crucified had been proclaimed. The nature of the sculpture also, especially what has been called the Celtic knot-work, corresponding as it does with the style of advancement to which the arts and sciences had attained in other things, and with the style of the illumination of several Irish manuscripts of the time, points to the period between the seventh and tenth centuries, as that during which they were erected. This knot-work (says Wilson in his *Archæology*) is to be found on the sculpture, the jewellery, the manuscripts, and the decorated shrines and book-cases of the early Irish Christian art, and has been perpetuated almost to our own day on the dirks of our Scottish Highlanders.

But the symbols which are sculptured upon them have as yet defied the investigations of the archæologist. We can decipher the hieroglyphics of Egypt and the cuneiform inscriptions of Nineveh and Babylon, but we have not been able as yet to discover any satisfactory key to the meaning of those strange mysterious symbols on our Scottish stones. They occur so frequently as to preclude the idea of their having been the result of chance, and the style of their execution is so varied as to do away with the notion of their having been the production of any particular artist. Besides the cross, the most common symbols are the crescent and an ornament like a pair of spectacles, both of which are represented, sometimes with and sometimes without a sceptre, a mirror or *speculum*, a comb, a horse-shoe figure, and a serpent sometimes with and sometimes without a sceptre. The arrangement is not the same in any two stones, which leads, perhaps, to the supposition that a difference in arrangement implies a difference in the meaning intended to be conveyed.

Besides these symbols, the stones are often engraved with representations of personages and events. We have warriors on horseback and on foot, armed with sword and spear, battle-axe and shield. We have priests and monks, harpers and harps, processions and battles, chairs and war chariots, bows and arrows, horses and dogs. On one monument only is there the representation of a boat, namely, on S. Orland's stone, near Glamis. These stand out on the moss-grown stones, telling their tales of other times, telling us that our Scoto-Pictish ancestors were men of like tastes, feelings, and dispositions with ourselves, and testifying to the prevalence of a degree of civilisation, which, but for those representations, we should scarcely have expected.

It is very interesting to compare the representations which they give of animals which are indigenous to Scotland with those inhabiting foreign countries; for whilst the former are in general executed with considerable accuracy, mistakes are often made in the delineation of the latter; the elephant, for instance, being represented with hoofs like a horse in place of paws. Apes, monkeys, serpents, and even tigers are in general correctly executed, which shows, perhaps, that, whilst the means of transit then existing sufficed to introduce those animals into Scottish soil, there were no means of conveyance sufficient to transport the gigantic elephant, and that therefore the artist, in delineating the animal which he had never seen, but had only acquired the knowledge of from some rude sketch, or perhaps only from verbal description, fell into mistakes with regard to the form of some parts of its body. Indeed we are not left without trustworthy evidence of the intercourse of Scotland in early times with Eastern countries; for only the other year, amongst a hoard of coins found in Orkney, there was one of an Eastern caliph of the ninth century. The hoard is supposed to have been hidden by a Norse pirate in the tenth century.

Although we have not been able to read the language which the symbols express, we have perhaps advanced a step towards it, in being able to limit and define the district in which the stones on which they are sculptured occur.

The symbolic emblems occur much more rarely on stones between the Tay and the Dee than between the Dee and the Spey, and still more rarely between the Tay and the Forth. South of the Forth there are only two known to exist. One of them owes its preservation to its having been used as a lintel in a window of the church at Abercorn, the see of the Pictish Bishop Trumwine, of whom we read in Bede, and who, on the defeat of the Anglo-Saxons by the Picts, took refuge at Streannessaleh or Whitby. (Bohn's *Bede*, p. 224.) The other formed a foot-bridge in Princes Street Gardens, Edinburgh, but it has recently been removed to the Antiquarian Museum.

The crosses of Iona and the west coast of Scotland, bear a general resemblance to those in the eastern districts of the country, with such differences as mark them out as the work of another age and race. The crosses of Wales, Ireland, and the Isle of Man, also bear a general resemblance to the Scottish crosses, but though similar in some respects, the style of the crosses of each of these countries differs quite as much as one order of Classic or one style of Gothic architecture differs from another order or style. The crosses of Ireland and Scotland bear the greatest resemblance.

Sixty stones in Scotland have been found near ancient ecclesiastical sites. Excepting the mirror and comb, no symbolical figures similar to

those on the Scottish stones occur in any other country. The mirror and comb, however, are found in some of the tombs of the catacombs at Rome.

On two stones only do we find inscriptions in alphabetical characters, namely at St. Vigean's near Arbroath, and at the otherwise unsculptured stone at Newton Garioch. The inscription on the stone at St. Vigean's is in the same Celtic character as that on the early monuments of Ireland, and the more ancient monuments at Iona. There can be little doubt that it is the oldest piece of writing in Scotland, not excepting perhaps the ancient Celtic manuscript recently found at Trinity College, Cambridge, the Gaelic of which is supposed to be six or seven centuries older than any previously known to be in existence. So far as unobliterated, the inscription on the stone at St. Vigean's reads thus, *Drosten ipe Voret dt Forcus*, which Professor Simpson, who is now almost as famous for his knowledge of such subjects as he is for that of his own profession, translates — "*Drosten the son of Voret (or Feredith) of the race of Fergus.*" He has been enabled to translate it by referring to ancient Welsh or British rather than to Scoto-Celtic analogies, although it must be remembered that all these are but dialects of the great Celtic tongue. His translation is confirmed to a certain extent, by references to ancient Scottish histories.

The stone at Newton Garioch is inscribed in unknown characters. The late Professor Mill, of Cambridge, thought that they were Phœnician. Mr. Stuart, the author of the preface to the invaluable volume published by the Spalding Club, thinks he has discovered all the letters on pottery found by Layard at Nineveh. The only inference we can draw as yet with regard to these sculptured stones, is that they were peculiar to a people on the north-east coast of Scotland. — *The Scottish Ecclesiastical Journal*.

ST. PETER'S, ROME.

WRITING some days before the Canonisation Ceremonial, the *Times* correspondent at Rome says:—"Only a few days have passed since I sent you a description of the interior of St. Peter's; but I was not satisfied with it, and so I went down again on Friday morning to get materials for a better. On entering it, the impression of every one with any pretension to taste must be, I am sure, 'What labour has been taken to hide and destroy the effect of so much grandeur!' The first sight reminds one of the tawdry churches in Southern Italy, where paper and gilt and cheap drapery are used as substitutes for the creations of the sculptor and the painter, and I must confess to a feeling of intense regret at seeing this vast temple dwarfed in its proportions and muffled up in silk and cotton velvet. The façade of the church is not touched; but immediately over the entrance in the inside are the Papal arms on a shield, probably of paper, with the tiara above, and two archangels or genii of small proportions on the sides as supporters; crimson velvet and yellow hangings shroud the door. If you have ever seen St. Peter's you will remember the grand sweep there was from this point up to the *baldachino* over the tomb of the saint. The eye revelled and luxuriated in the mere spaciousness of the building, while the gigantic columns and the wide-spreading arches and the subdued colour of the grey marbles found a combination which awakened a sentiment of awe, and made one almost exclaim, 'Surely God is here!' All is now changed, for all is 'of the earth, earthy.' The arches are divided to admit of the introduction of pictorial representations of incidents in the lives of the future saints; and thus you can no longer see on either side the colossal works in sculpture which all but breathe, and secure to the minds who conceived them a greater immortality than that of canonisation. Above each arch is a picture, painted in distemper, of some incident connected with the saints. There is an explanation underneath, and then hanging draperies of yellow silk fall down to the ground; while over the upper part of the arch and underneath the picture is festooned crimson velvet. On each side of this central aisle or nave are five vast candelabra, which one might safely say are nearly 200 feet high, covered over with gilt, while three circles of candles are carried round them. In every interval between them are suspended gigantic cirelets, with several ranges of wax candles in them. St. Peter looks particularly small, for there is a want of elevation in the *baldachino* over his head, while the two mighty candelabra on either side greatly assist the effect of reduction; and now we stand before the tomb of the saint, which is surrounded by four of the same candelabra, encircled, like the others, with three rows of candles. Each transept on either side of the tomb is provided with twenty-nine of the candelabra and cirelets I have already described, and yellow and crimson hangings everywhere cover up miracles of genius. The Papal chair at the extreme end of the church is now a thing of cloth of velvet, the original chair having been removed; above it is a lunette representing the reception of the saints into Paradise; lights surround it, and rays of gilt dart out from every point about it. Portions of the side aisles are disfigured and laden and decorated in the same way. Yellow and crimson everywhere; pictures in distemper everywhere; every altar has one, and every picture is surrounded by candles, and every altar is shrouded in cloth, or cotton, or silk, or velvet. One could almost weep at seeing the tawdry rubbish which covers up precious marbles and priceless statuary, and pilasters and columns built for eternity; and Michael Angelo, Raphael, and Canova, and all the others who form the bright galaxy of genius that raised this magnificent temple, might almost rejoice if the fears of the authorities were realised, and the hangings were burnt down. When I have added that round the entire church, above the architrave, run two rows of candles, I shall have completed my report of this wonderful specimen of bad taste and of ingenious upholstery. In its *genre* it is marvellous, but it is a bad *genre*, and every one will, I am sure, be longing to see this stupendous temple restored once more to its simple grandeur.

Altogether, there are at least 100,000 lights, some assure me 150,000, and to give them full effect, every window is closed. Some apprehension is entertained lest this body of light may lead to an accident, and fire-engines are ordered to be in readiness. One certain result of all this muffling up and of blocking windows will be that one-third at least of the ecclesiastics who are entitled to attend the ceremonies will be excluded, while out of ninety Jesuits privileged to be present in private seats only thirty can be accommodated. Great disappointment is therefore felt in many quarters, for neither love nor money can enlarge St. Peter's."

CHURCH, CHAPEL, SCHOOL, AND OTHER BUILDINGS.

CHURCHES.

TOUCHEN-END, BRAY, MADDENHEAD.—This church has been lately consecrated. The buildings are erected upon land presented by Mrs. Newcome, and the church has been erected from a design of Mr. John Turner's, of London, by Mr. Robert Vickery, builder, Bray Wick, with funds supplied chiefly by Mrs. Levett and others. The church is entered through an oaken open-timbered and traiered porch, situate on the north side, toward the west end, and is 52 ft. 6 in. long by 21 ft. wide, with a chancel of 23 ft. by 11 ft., and is calculated to hold 186 persons (144 adults and 42 children). There is a bell-turret over the west gable. The style of the design is Decorated Gothic. The materials used for the walls are red Berkshire brick and Bath stone, with an open-timber roof ceiled between rafters, and tile covering. The sittings, altar table, altar rail, pulpit, reading and lecture desk, are executed in pitch pine. The greater part of the window tracery has been filled in with stained glass of a simple Gresaille pattern. The font, reredos, pulpit, lecture and reading desk, have been executed by Mr. White, of London; the other portion of the fittings by Mr. Mickley, of Bray; the stained glass by Messrs. Laver & Barraud, of London. Attached to the church on the north side is the robing-room, connecting the church with the school and dwelling; forming together the eastern and southern boundaries of a quadrangle. The new school-room is 22 ft. long by 18 ft. wide, with an open-timbered roof ceiled between the rafters, and calculated to hold 50 pupils.

ASPLEY GUISE.—A stained window, representing "The Adoration of the Magi," has recently been placed in the parish church of Aspley Guise, Bedfordshire, and is dedicated to the memory of the late Prince Consort.

WROTHAM.—The upper portion of this church is undergoing the work of restoration. This is one of the few churches in existence in which a churchyard pathway runs through the basement of the tower.

JARKHILL, HEREFORDSHIRE.—This church is about to be restored, and a great portion rebuilt, at a cost of £1,000. The foundation stone has been already laid. Messrs. Ainslie and Blashill, of old Jewry Chambers, London, are the architects, and Messrs. Nibbett and King, of Gloucester, the contractors.

NORMANTON, DERBY.—The parish church of Normanton by Derby has recently been opened for public worship. The new church has been erected upon the site of the old one; it was intended to have preserved and restored the old tower, but being found in a dangerous state it was removed. Sittings are now provided for 300 persons, and the plan shows a nave and chancel, with south aisle, chancel isle, and vestry. The internal arches and columns are of dressed stone; the nave and south aisle are paved with buff, black, and red quarries in patterns; and the chancel with Maw & Co.'s encaustic tiles; the pulpit of Derbyshire alabaster and marble. The sittings throughout are in open benches; these, with the remainder of the exposed woodwork, being stained and varnished. The new tower and spire rise upwards of 80 feet, and being situate on high ground, are seen for many miles round. The works have been executed by Messrs. W. & C. Bridgert, contractors, from a design by Messrs. Giles and Brookhouse, of Derby, architects.

ELLINGHAM CHURCH, CHATHILL.—This church, which has been re-built at the cost of the vicar, the Rev. Chas. Thorpe, M.A., is now reopened. The plan is cruciform, consisting of nave and chancel, and north and south transepts, with the addition of a porch on the south side of the nave, and a sacristy on the north side of the chancel. A square tower rises from the point of intersection, having closely embrasured parapets; and a quadrangular slated spirelet, surmounted by a vane. The Rev. Mr. Turner was the architect.

STOWE CHURCH, STAFFORDSHIRE.—A painted window is proposed to be placed in Stowe Church. The drawing of the window is by Messrs. Henton, Butler, and Bayne, of London, and the cost will be about £300. The whole of the chancel of this church has been lately restored, the ancient features of the building being retained.

FALSGRAVE, NEAR SCARBOROUGH.—A new church is about to be built at Falsgrave, Yorkshire.

WYRARDISBURY.—The parish church of Wyrardisbury has lately been thoroughly restored, the chancel and the nave arcades being the only portions of the old edifice that have been retained; the north aisle has been rebuilt, the old doorway therein (the only object it possessed of antiquarian interest) having been carefully copied. A new south aisle has been added. The nave, which was formerly covered with a plaster ceiling, is now, together with the north and south aisles, roofed over with handsome open timber roofs. The western gallery has been taken down, and the old west window opened. The church is now thoroughly re-seated with plain open benches, and the passages re-paved, and will be again open for service in the course of next month. The works have been carried out in a very satisfactory manner by Mr. Harley, of Slough, from the designs and under the superintendence of Mr. Raphael Brandon, who, some years back, rebuilt the adjoining parish church at Datchet.

SCHOOLS.

ST. PHILIP AND JACOB, BRISTOL.—These schools were formally opened on the 11th June. The architects were Mr. I. A. Clarke and Mr. E. W. Godwin, of Bristol, who were recommended by Mr. G. C. Street, F.S.A. The building, which forms one side of Mary Bush Lane, consists of three principal stories, with intermediate floors at two ends of the buildings for the teachers' residences. The girls' school is on the top floor; measures 70 feet by 20, with a class-room 20 feet by 14, abundance of light being provided on both sides by bringing the building out to the line of the street. The boys' school and class are both on the floor under, of the same dimensions; the entrance to the boys' school being at the Queen Street end of Mary Bush Lane, through a small play-ground or court, and the girls' entrance at the opposite end. The ground-floor is occupied by a committee-room, various courts, and rooms for the use of the teachers. The schools are arranged to accommodate 170 boys and 170 girls, the total cost of the erection being only about £2,000. The architects have been careful to avoid bringing any soft or light stone within the reach of the children. With this view they have constructed all the entrances in a novel and effective manner, by going away with all angles, and rounding the sides of the doorways, which are built of hard pennant stone. The contract was taken by Mr. R. M. Bryant, of Old Market Street, the sub-contractors being Mr. J. King, for the mason's work; Mr. Hill, for the tiler's, plasterer's, painter's and glazier's work; Mr. Tuekey, for the plumber's work; Mr. Leaman, for the iron work.

BRISTOL.—On Wednesday, June 18, some new schoolrooms were opened in Lower Street, Great Gardens, Bristol.

ST. GEORGE'S, EAST.—The new Middlesex Society's schools, recently erected on the site of those originally established in 1781, for the education of the poor in the principles of the Protestant faith, but which were found too small for the requirements of this populous district, were opened on the 17th instant, by the Lord Bishop of London. The new schools are calculated to hold about 200 boys and 200 girls, and were erected at a cost of about £2,049.

LEITH.—A new school has recently been opened in the fishing village of Leith, on the Essex coast. The building is capable of accommodating between 300 and 400 children, and is a plain and substantial brick edifice. Messrs. Habershon and Pike were the architects, and the cost of the building was about £700.

BUILDINGS.

MILFORD.—A large Malthouse, including engine-house, boiler-house, and workmen's cottages, is now in the course of erection at Milford Junction, abutting on the North Eastern Railway Line; it is one of the largest in the West Riding of Yorkshire, and when finished it may be said to be a first-class model. The proprietor is Wm. Naylor, Esq., the extensive maltster, of Leeds; the Architect, Mr. John Child, also of Leeds, and under his directions the works are being carried out by his assistant, Mr. William Henry Stead.

NEW POOR LAW OFFICES, DERBY.—The new building is situate in Becket Street, Wardwick, and contains on the ground floor a spacious entrance hall, with large archway leading to the principal staircase, in an inner hall. The exterior is built with pressed bricks and stone. The style of architecture adopted is Italian, and a successful attempt has been made to produce at once the effect of a public building limited in size, bold in design and detail, combined with elegance and simplicity. The front is 50 ft. wide and 35 ft. high; the centre, being recessed, a wing is formed on either side; the centre, containing principal entrance, is surmounted by curved stone panel, with descriptive inscription in raised letters and ornamental terminations. The parapet contains open stone balustrading on stone cornice. The upper windows have pilasters with carved capitals and deeply moulded circular architraves; also, open balconies supported on corbelled entablature; the whole facing of the lower part is of stone; the dressings to the lower windows, principal entrance, and angles are vermiculated with bold rusticated joints, the several key stones being richly carved. The front is enclosed with suitable iron palisading, with requisite gates and stone piers. The design selected in competition has been carried out by Mr. Dunsauty, contractor, under the direction of the architects, Messrs. Giles & Brookhouse, Derby.

RAMSEY.—*Mond's Herald* says that a lady resident at Ramsey is about to erect a commodious House of Industry, for the benefit of that town and the parish of Maughold, to serve as a monument to a noble brother, who, after having honourably served his country as the governor of a large dependency with integrity and noble disinterestedness, died on his return to his native country. The charity is already vested in trustees, who are in treaty for an acre and a half, or more, of land, on which to erect the spacious building.

BIRKENHEAD.—The new County Court which has been erected at Birkenhead was opened for business on the 17th instant. The building is purely Italian in style, and has a very light, handsome appearance, forming quite an ornament to the neighbourhood. It stands upon 2,141 yards of land, and has been built by Government, at a cost of £7,250; of which sum, £1,000 was paid for the land. The building has been erected from designs by Mr. Charles Reeves, Government architect, of London; and the contractor was Mr. Henry Fisher, builder, of Conway-street. Mr. Bethell was clerk of the works, under Mr. Reeves, the architect. The foundation-stone of the new court was laid on the 13th of November, 1860, by the judge, J. W. Harden, Esq.; so that upwards of eighteen months have been occupied in its erection.

FOUNDATION STONES.—The foundation stone of the new schools of the

district church of St. Andrew's, Croydon, was recently laid by the Rev. J. H. Randolph, rector of Sanderstead.—The foundation stone of a new district church at Luedon, in the parish of Widdicombe, was laid on the 9th inst. The church is to be built of granite stone, with windows and other architectural features in Bath stone; whilst the roof will be of open timber work covered with slates. The style of the building will be the "Early decorated Gothic," and will consist of nave, chancel, tower, and vestry, and will contain about 200 sittings. Mr. J. W. Rowell, of the Devon Estate Offices, Newton, is the architect; and Mr. Chudleigh, of the same place, is the builder.—The foundation stone of a new church, in connection with the Torbay and Brixham Mission, was laid on 24th May. The church will be 65 feet in length, 38 feet in width, and will have steeples 50 feet in height. Mr. Phelps is the designer and builder.—The foundation stone of a new Wesleyan chapel at Edgworth, was laid on Saturday last by James Barlow, Esq. The new building will be in the Gothic style of architecture, from the plans of Messrs. W. and J. W. Best, architects, Bolton. It will accommodate about 500 persons.—On Wednesday afternoon, June 18, the foundation stone of a chapel for the Bible Christians of Weston-super-Mare took place. The chapel, which will be in the Italian style, is designed to accommodate 250 persons, and the cost of its erection will be about £400, which, with £140 purchase-money for the ground, together with other necessary expenses, will make the sum total of £600 to be provided. The builder is Mr. Richard Lewis, of Weston.—The foundation-stone of a new north aisle to St. John's Church, Bovey Tracey, Devon, was laid on the 16th instant.—The memorial-stone of the Devonport, Stonehouse, and Cornwall Hospital was laid by the Earl of Mount Edgumbe, on the 17th instant.—June 14, the foundation-stone of a Primitive Methodist Chapel at Old Sherburn, Durham, was laid with the usual ceremony.—The foundation-stone of a new bridge across the Derwent was laid on the 18th of June. The bridge is to be completed by the 1st of November. The contract price is £492; and the contractors are Mr. Wm. Lyries, Crook; and Mr. Ayton, Thornley.—The foundation-stones of two new Primitive Methodist chapels at Froghall and Rocester, Staffordshire, have recently been laid.—On Whit-Tuesday the foundation-stone of a new national school was laid at Staunton, by Lady Lechmere. The architect is Mr. G. R. Clarke; the builder, Mr. J. Griffiths, of Eldersfield. The estimate for the schoolroom, class-room, and minister's residence, including all internal fittings, laying out the grounds, &c., was £630.

GENERAL ITEMS.

NOTTINGHAM.—The *Nottingham Guardian* says:—"It has been decided by the town council to construct the subterranean portion of the new street on the new London model—that is, to form a continuous culvert from end to end, the drainage underlying it, and receptacles being formed along the route for gas and water pipes. This large tunnel is to be constructed at the cost of the owners of property on each side of the street, who will have the option of inclosing and using the half opposite to their several premises, on condition that they allow access, at all proper times, to parties authorised to inspect, alter, or repair the culvert or any of the pipes. The main object is, of course, to obviate the necessity of having recourse to the expensive, obstructive, and often annoying practice of taking up the pavement of the streets."

THE ASCOT NURSERY GROUNDS.—The *Windsor Express* says that about eighty-four acres of the Kennel Allotment, hitherto yielding about £5 a year, which immediately adjoins a proposed hotel, has been leased by Mr. Standish, the enterprising proprietor of the Royal Nursery, Bagshot; and it will soon be converted into a capacious and, we doubt not, flourishing nursery-ground. Ultimately, as we are informed, the establishment will be entirely conducted here, instead of at Bagshot, this improvement realising the idea of converting a wilderness into a garden.

MEMORIALS TO THE LATE PRINCE ALBERT.—Subscriptions are being raised at Warwick by the Rev. Mr. Boudlier, vicar of St. Mary's, and other gentlemen, to erect a substantial memorial to the late Prince Albert.—The Cambridge memorial is to cost £2,000. The subscribers are to decide whether it is to be of marble inside the Senate House, or of bronze in front of it.—The *Sydney Morning Herald* says that meetings continue to be held in all parts of Australia in aid of the project for erecting a statue to the memory of Prince Albert, and a very general sympathy towards the object has been expressed.—Subscriptions have been raised for the commencement of an endowment for St. Thomas's Almshouses, Gravesend, as a local memorial to the late Prince Consort. It is intended to place a tablet on a conspicuous part of the building, to record the object for which the fund was raised.—The foundation-stone of a memorial to the late Prince Albert was laid on Monday week, at Burnstaple. The memorial, of which Mr. R. D. Gould is the architect, will consist of a tower, 60 feet in height, to be called the "Albert Memorial Tower," at the summit of which will be a four-dial illuminated clock, and, at the bottom, a drinking-fountain.

THE NATIONAL MEMORIAL TO THE LATE PRINCE ALBERT.—The architects who were consulted by the Queen's Committee have reported that, to carry out the frequently-expressed wishes of the Prince, they would propose the erection of a noble hall, as a place for art or social science meetings, to be built on the south side of the road opposite the proposed memorial, on the vacant ground at the back of the Horticultural Gardens. If this site should be approved, they would invite the individual efforts of the architect and the sculptor for its realisation. The memorial is proposed to consist of one or several groups of sculpture; and if placed in the open air, they must be of bronze; but if of marble, a building must be erected to protect them.

STATUE OF HALLAM.—Mr. Theed has just executed a statue of Hallam,

which is about to be erected in St. Paul's Cathedral. Somewhat above the life size, the historian is represented standing in his doctor's robes, pencil in hand. A happy thought has struck him, he wears a pleased expression of countenance, and while one hand has the pencil poised, the other grasps a manuscript volume in which to write. The lines of Hallam's face were a little hard, and the artist has happily softened them by the expression which he has put into them. The attitude is natural, and the drapery is cleverly handled. The folds are perfectly easy, and the texture is made palpable without any appearance of effort. Some other interesting works may be seen in Mr. Theed's studio, in the course of preparation—as a statue of the Prince Consort in Highland dress, intended for Balmoral, and one of the Duchess of Kent, intended for the mausoleum at Frogmore. In both great ability is displayed, while the appearance of the Highland garb in the one case, and of a modern lady's dress in the other, will awaken the interest of all who know how difficult it is to deal with drapery in sculpture.

PROPOSED FORT AT PLYMOUTH.—The Royal Commission on the National Defences having been requested to reconsider, in conjunction with other officers, the subject of the construction of a fort behind Plymouth Breakwater, a supplemental report has been presented, stating, in the first place, that a fort on or near the breakwater is required for the more complete command and protection of the Sound. It would also be in the best position for supporting floating defences, and for affording protection to any portion of our sea-going fleet seeking refuge under its guns. The next question was, on what spot such a work should be placed. Its erection on the breakwater itself is pronounced objectionable; indeed, the foundation could not be depended upon for a superstructure of such weight. The site recommended is the Shovel Rock, inside and near the centre of the breakwater, and as close to its inner slope as practicable. The rock is in every respect suitable for the foundation, and a fort in that position will not interfere with the anchorage of a single ship. Being protected from the wash of the sea, the lower tier of guns may be placed as low as the top of the breakwater will allow; and communication with the fort will be practicable in all weathers.

A NEW THEATRE ON THE RUINS OF POMPEII.—At the moment of the destruction of the city of Pompeii by an eruption of Mount Vesuvius in the year A.D. 79, a theatrical representation was being given in the amphitheatre. A speculator, named Langini, having taken advantage of that historical reminiscence, has just constructed a theatre on the ruins of the above-named city, the opening of which he announces in the following terms:—"After a lapse of eighteen hundred years, the theatre of the city will be reopened with 'La Figlia del Regimento.' I solicit from the nobility and gentry a continuance of the favour constantly bestowed on my predecessor, Marcus Quintus Martins, and beg to assure them that I shall make every effort to equal the rare qualities he displayed during his management."

A CONTRAST.—Mr. G. G. Scott, in his lecture on the formation of a national museum at South Kensington, on the 17th inst., referred to the first and last of his lectures delivered before the Royal Academy. "They were reported," said Mr. Scott, "in the *Builder* and *Building News*, in March and April 1857, and February 1860." The *Building News* acted honourably last week, by reporting Mr. Scott's words. The *Builder* acted otherwise, by distorting what the lecturer stated, and substituting the word "elsewhere" for the *Building News*. We suppose it must be gall and wormwood to our contemporary to know that another journal reports lectures, and gets honourable mention from the lecturers themselves.

A SNEERING EDITOR.—The last number of the *Builder* contains a short account of the Sturges Memorial at Birmingham. The account speaks of "Mr. Joseph Sturges, the Quaker, who it may be remembered was one of those sanguine gentlemen who conceived the idea of obviating the Crimean war, by going to Russia, and using their influence with the Emperor Nicholas to that end." Not another word is said about the life and labours of the eminent Birmingham philanthropist. Does the *Builder* think that it can snuff out the reputation of a great and good man with a sneer? For nearly a half a century Mr. Sturges was known as a large-hearted, active philanthropist. He took a prominent part in the agitations against the slave trade, slavery, and the Corn-laws. He was a perpetual worker and munificent subscriber towards reformatories, model lodging-houses, temperance and peace societies, and all public efforts to educate, elevate, and christianise the people. Should the editor of the *Builder* perform, during his lifetime, a tenth part of such useful labours as the late Mr. Sturges, the editor, deserve a memorial too.

THE ACCIDENT TO THE UNDERGROUND RAILWAY.—After many successive hours of unwearying labour, the engineer to the Metropolitan Board of Works, Mr. E. Cooper, assisted by Mr. Fry, has at length succeeded in a great measure in turning away the sewage of the Fleet Ditch from the extensive railway works at Copple-row, where the current, notwithstanding all the precautions that had been taken, was every hour doing more or less damage to the foundation of the brickwork in the immediate vicinity of the tunnel, as well as inside that admirable specimen of underground workmanship. Though the stream was not wholly controlled by the new dam on Tuesday night, its force has been materially diminished, and no further damage need now be apprehended.

IMPROVEMENTS IN LEICESTER.—The old East-gates, which have long been regarded as a nuisance and obstruction to the public traffic of Leicester, are entirely cleared away. This alteration will cost the Corporation £6,000; but the work has been urged upon them by many gentlemen, who proved, by statistics, that the East-gate buildings were really dangerous to life and limb.

THE MIDDLE LEVEL.—The dam, which has at last been successfully constructed, is found to work efficiently, the flow of the tidal waters into the drain having been completely checked. Every day this week the work has been further strengthened, so as to enable it to resist the pressure of the high tides which will again prevail to-day and to-morrow. The drainage of the flooded country and the relief of the drain itself is to be effected by twelve great siphons, each of 3 ft. diameter; and it is expected that in a few days the "Middle Level inundation," which has become almost as familiar in men's mouths as "household words," will be merely a matter of local history. If report, however, speaks truly, something more will be heard on the subject in the courts of law, as the sufferers from the calamity intend to obtain some compensation, if possible, from the Middle Level Commissioners.

CHIPS.

THE exterior of the ancient castle at Brechin, N.B., is now undergoing renovation.

Lord Dartmouth has made a munificent offer to assign, as a recreation-ground for the inhabitants of Westbromwich, a piece of ground adjoining the railway station, twenty-two acres in extent.

The Prince Consort Memorial Fund in Ireland has already exceeded £5,000.

It is proposed to build a new Cattle Market for Newcastle. The total sum required is about £5,000.

It is proposed to erect a Lunatic Asylum for South Staffordshire.

On the line of railway at present being constructed between Barnardcastle and Bishop Auckland a monster bridge is in course of erection, which, when completed, will be several feet higher than the High-level at Newcastle. The situation of the bridge is either on, or near Cockfield Fell.

Twenty-three pieces of china in the hall of the South Kensington Museum are valued at £37,000. They are marked "H." and "D."—the initials of Henry IV. of France, and Diana of Poitiers, and fifty-nine pieces only were made.

A drinking-fountain is about to be erected in Silver Street, Reading, by Mr. Martin H. Sutton.

The *Bristol Daily Post* says:—"We understand that Handel Cosham, Esq., of Shortwood Lodge, has purchased a piece of ground, near the Baptist Chapel, Thornbury, for the purpose of building a suite of Dissenting Free Schools, to which there is also some talk of a lecture-room being added. Mr. Cosham has also presented a considerable sum towards the building fund. The building will, we hear, be proceeded with shortly."

A memorial bust of John Locke, executed by Mr. Papworth, is to be inaugurated at the next Quarter Sessions of that county, in the shire hall at Taunton.

A new Philharmonic Hall, 28 ft. by 50 ft., has been opened at Ramsgate.

A renewal of divine service at the old church of St. Mary the Virgin, Dover castle, after the lapse of a century and three quarters, was, on Sunday, welcomed with considerable interest. This church has lately been restored.

A movement is on foot by the corporation of New York, to procure a plot of ground in one of the cemeteries in the vicinity of the city, where the bodies of all the New York Volunteers, who may die in defence of the Union, may be interred at the expense of the state.

The second and third *conversazione* of the present session of the Society of Arts, will be held at the South Kensington Museum, on the 9th of July and the 8th of October.

At the examinations for 1862 of the Society of Arts, two prizes were offered for free-hand drawing. The first one, of £5, was obtained by Mr. Isaac Holloway, glass painter, at Messrs. Chance's library, Birmingham; and the second, of £3, by Mr. Thomas William Camm, draughtsman, at Messrs. Chance's library.

The attendance at the International Exhibition on Tuesday was more numerous than on any day since the opening, the admissions for payment being 61,311; by season tickets, 4,260; total, 65,571.

A new Post Office at Perth, in the Italian style of street architecture, is now completed.

On Saturday afternoon last, an explosion occurred at the percussion manufactory of Messrs. Walker, Graham Street, Birmingham, by which six people were killed, and more than thirty were injured more or less severely, four of whom are not expected to recover.

An extensive fire broke out in Quebec on the morning of the 7th. 120 houses were destroyed in the St. Lewis suburbs. The buildings were chiefly of wood, and inhabited by mechanics.

The joiners of Bolton are on strike for the Saturday half-holiday.

It is proposed to erect a statue to the memory of the late Lord-Lieutenant of Devonport, the Earl Fortescue.

Correspondence.

THE SATURDAY HALF-HOLIDAY AND THE EXHIBITION.

Sir,—I hope you will continue to agitate the question of opening the International Exhibition on Saturdays as shilling days. For some time a praiseworthy effort has been made in and out of the metropolis to extend the Saturday half-holiday. And I am glad to say that from the time the idea was started in Manchester, some fifteen or sixteen years since, it has been making progress; and I know nothing more likely to promote the movement than opening the Exhibition for a shilling on Saturdays. It may be said that Saturday is an aristocratic day; that the upper ten

thousand delight to sport on that day at morning entertainments, at the Zoological Gardens, the Crystal Palace, and other places; and that it would interfere with an established habit to let the multitude come between the wind and their nobility on Saturdays. I answer and say, that it is getting an established habit for the *workers* to enjoy themselves on that day too; and let the lesser give way to the greater in this as in other things. I do not wish to interfere with the enjoyments of the aristocracy—neither do I wish the aristocracy to interfere with the enjoyments of the people. The rich and privileged may, if they think proper, make a select day of their own, say Wednesday, when they may have the Crystal Palace, the Exhibition, the South Kensington Museum, and other places, when there would be no fear of popular intrusion. Labour should have its half-holiday, and Saturday should be set apart for the purpose. It would in every way be promotive of the public good. The arrangement I recommend would be a boon to hundreds of thousands, and a disadvantage to no one. It would establish a good precedent, encourage a good movement, and benefit society. Why then hesitate for a moment in effecting the alteration?—A WORKER.

TENDERS.

WANDSWORTH ROAD.—For fifteen cottages, Wandsworth Road. Mr. Caesar A. Long, architect.

Greig	£1,675 0 0	Restell (accepted)	£1,432 0 0
KENSINGTON. —For repairs, Vestry Hall, Kensington.			
Cowland	£239 0 0	Crafer	£158 0 0
Cade	217 0 0	Woodard	152 10 0
Wheeler	190 0 0	Hunt (accepted)	148 17 0
Rhodes and Roberts	160 0 0	Hardman	160 0 0
Taylor and Sen	159 0 0		

SHEFFIELD.—For the erection of the proposed Methodist New Connection College, Sheffield. Mr. William Hill, architect. Quantities supplied.

Mycock	£5,000 0 0		
LOWAN NORWOOD. —For laying-out grounds, forming roads, terraces, and slopes, and drainage connected with the same; erecting a porter's lodge, and laying the corridors, &c., with tile pavement, at the Jews' Hospital, Lower Norwood, Surrey. Messrs. Tillott and Chamberlain, architects. Accepted tenders for laying-out grounds and the drainage.			
Winn	£650 0 0	For tile-paving to corridors, &c.,—	
For porter's lodge,—		Cannon	£125 0 0
Wills	323 0 0		

DALTON.—For alterations and additions to the English Presbyterian Church, Shrubland Road, Dalton. Messrs. Tillott and Chamberlain, architects.

Prince	£318 0 0	Fish	£230 0 0
Cannon	310 0 0	Wills	218 0 0

NEW WANDSWORTH.—For a pair of semi-detached villas, Park Road, New Wandsworth. Mr. R. W. Giblett, architect.

Hewett	£800 0 0		
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CITY ROAD, LONDON.—For bricklayer's work to houses in City Road. Mr. Caesar A. Long, architect. Accepted tender.

Beale	£230 0 0		
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NORWICH.—For the erection of a dining-hall, 70 ft. by 20 ft., at the Pauper Lunatic Asylum, Norwich, for the Norwich Court of Guardians. Mr. J. S. Benest, architect. Quantities supplied.

Wright	£167 10 0	Burrell	£149 0 0
Chapman	153 10 0	Youngs	147 10 0
Plummer and Bloom	153 0 0	Murray and Son	145 0 0
Greengrass	149 15 0	Leach (accepted)	139 10 0
Browne and Bailey	149 10 0		

HUNTINGDON CORN EXCHANGE.—The tender sent in by Mr. John Bird, of Huntingdon, for the erection of the above corn exchange, has been accepted. £1,280. Mr. Robert Hutchinson, Huntingdon, architect.

NEEDINGWORTH, HUNTS.—For restoring and reseating the village church of Holywell cum Needingworth, Hunts. Robert Hutchinson, of Huntingdon, architect.

Richardson	£989 17 0	Allen and Smith	£835 0 0
Bunting and Son	942 0 0	Mason and Smith	816 17 0
Saint	865 0 0		

LAMBROOK.—For alterations at Lambrook, Berkshire, for William Edd, Esq. Mr. F. Warburton Stent, architect.

J. Kirk	£1,344 0 0	Bowley (accepted)	£1,095 0 0
Nicholson	1,190 0 0		

HOLBEACH.—For the erection of two new wings to the Union Workhouse. The following are the tenders:—

Blare, Watlington	£1,500 0 0	Moore and Son, Spalding	£1,120 0 0
Worswick, Long Sutton	1,430 0 0	Gilder Holbeach	928 0 0
Howse and Son, Holbeach and		Clarke Henry, Holbeach	849 0 0
Long Sutton	1,162 13 0	Clarke Samuel, Holbeach	848 0 0

Mr. Samuel Clarke's tender for £845 was accepted. The architect's estimate was £850.

PLYMOUTH.—For congregational chapel and schools, Plymouth. Messrs. Paul and Ayliffe, architects, Manchester and Burnley.

Matcham, Plymouth	£9,445 0 0	Sawyer, London	£7,963 0 0
Southall, London	8,121 0 0	Finch, Plymouth	7,768 0 0

Mr. Finch's tender accepted for the chapel, which only is to be built at present.

KEW STOKES.—For the restoration of the Parish Church at Kew Stokes, Somerset. Mr. John Norton, architect.

Hughes	£2,045 0 0	Beavan and Son	£1,674 10 0
Marquiss and Munro	1,594 0 0	E. Streeter	1,680 0 0
Broad	1,989 10 0	J. Dimont	1,629 15 0
E. Lewis	1,870 0 0	F. Durke (accepted)	1,569 0 0

WHITECHAPEL.—For alterations to Messrs. Merry and Nutter's Premises, High Street, Whitechapel. Mr. John Hudson, architect.

D. King	£929 0 0	Read and Son	£874 0 0
T. Little	910 0 0		

LONDON.—For the erection of a warehouse in Wood Street, City, for Mr. Brett. Tillott and Chamberlain, architects. Quantities supplied.

Myers and Sons	£5,209 0 0	Wills	£4,825 0 0
Piper and Wheeler	4,593 0 0	Fish	4,696 0 0
Lawrence and Sons	4,553 0 0	Cannon	4,600 0 0
Ashby and Sons	4,575 0 0	Brass (accepted)	4,455 0 0

Hill, Keddell, and Robison 4,846 0 0 | | |

HAMPSHIRE ROAD.—For the erection of a new Congregational Church in Talmers Square, Hampshire Road. Including boundary fence.

Scrivenor and White	£5,991 0 0	Myers and Sons	£4,983 0 0
Piper and Wheeler	5,875 0 0	Patman and Fotheringham	4,983 0 0
Thos. Little	5,693 0 0	Jackson and Shaw	4,940 0 0
Thos. Richards	5,638 0 0	Dove, Brothers, Chapel, £4,583	
Saunders	5,490 0 0	4s.; Fence, £178 10s.	4,765 0 0
Iliggs	5,432 0 0		

CHEAM, SURREY.—For rebuilding Cheam Church, Surrey. Mr. Pownall, architect.

King, Burton, and Co.	£1,584 0 0	Macey	£3,882 0 0
Ashby and Horner	4,175 0 0	Jacklin	3,850 0 0
Lawrence and Sons	4,103 0 0	Burrell and Spinks	3,680 0 0
Myers	3,993 0 0	Adamson and Sons	3,591 0 0
Piper and Wheeler	3,970 0 0	Sharpington and Cole	3,561 0 0
Tracey and Co.	3,908 0 0		

